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# CANCER IN

# MONTANA

## 1979 — 1986

Montana Central Tumor Registry  
State Dept. of Health & Environmental Sciences  
Cogswell Building  
Helena, MT 59620

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CANCER IN MONTANA

1979 - 1986

MONTANA CENTRAL TUMOR REGISTRY  
STATE DEPT. OF HEALTH & ENVIRONMENTAL SCIENCES  
COGSWELL BUILDING  
HELENA, MT 59620

Published 1988

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Program Manager

The MCTR staff gratefully acknowledges Martin Skinner, M.D., and Martin Hamilton, Ph.D., for their invaluable assistance in preparing this report.

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## INTRODUCTION

The Montana Central Tumor Registry (MCTR) has actually had a long, although sporadic, history. A number of Montana physicians, medical records practitioners, and organizations have contributed, in one way or another, to a greater extent or lesser, to the program and database which exists today. The extent to which the current database is complete and the degree of widespread cooperation in its maintenance is due to the efforts of many people, most of whom receive no monetary compensation and seldom enough recognition. To these many persons, we express our thanks. Without this voluntary cooperation, there would be no Tumor Registry.

The first effort at a tumor registry in Montana was the Mary Swift Tumor Clinic in Butte, which began in the 1950's, funded by a legacy donation. This clinic contained a register of cancer patients seen in the Butte area, and continued operation until 1983. Some of the register's data are now included in the current Montana Central Tumor Registry.

In 1970, a central tumor registry was established by the Montana Medical Education and Research Foundation, Mountain States Regional Medical Program; it existed for only 18 months. This activity was phased out after the federal government discontinued regional medical programs; the data was never used.

Five years later, the Montana Foundation for Medical Care attempted to reestablish the tumor registry, which lasted another 18 months. This attempt failed not by choice of the participating hospitals, but because federal funds were once again eliminated. At that time, when the registry was discontinued, there were 33 hospitals participating in the program; however, the collected cancer data were never utilized.

In 1979, the Montana Central Tumor Registry was approved for two years by the legislative session, to be under the direction of the State Department of Health and Environmental Sciences. Although the hospitals were concerned about the possible collapse of funding again, the program won the confidence of a total of 46 hospitals which were anxious to contribute their cancer data in order to provide uniform statewide cancer reporting and a follow up end result information data system for the use of everyone involved in cancer treatment and prevention -- a goal that had never been achieved from any of the previous tumor registries.

These 46 hospitals elected either to be visited on a periodic basis by staff contracted from the Montana Foundation for Medical Care, or to maintain their own tumor registry. During this time, detailed cancer data were collected on 2,352 cancer patients diagnosed with cancer in 1979 and 1980.

Based largely on the favorable experience reported to it, the 1981 legislature continued funding the Montana Central Tumor Registry and made cancer a reportable disease, requiring all hospitals in the state to report their cancer cases.

The personal identity of all the cases are protected by law and access to any individual data about patients is severely limited by law.

The 1983 legislature continued funding, as did the 1985 legislative assembly.

In 1985, the legislature approved House Bill 113, which provided for cancer reporting by independent clinical laboratories in addition to hospitals.

These bills were important in helping the MCTR obtain more complete, reliable statistics and in furthering the objective of a valid population-based cancer registry for the state.

Currently, over 65 hospitals and laboratories, including Veterans' Administration hospitals and cancer treatment centers, are reporting cancer data to the central office in Helena where data are coded for computer entry and controlled for quality.

The goals of the Montana Central Tumor Registry are:

1. To facilitate the systematic follow-up of cancer patients at regular intervals in order to help save lives by early detection and treatment of local recurrence, recurrence in regional lymph nodes, solitary distant metastases, and additional primary lesions.
2. To provide meaningful feedback to the medical profession regarding cancer in their practices, hospitals, state and region.
3. To define areas of further research and planning.
4. To determine statistical facts about early diagnosis, treatment and survival in various malignant diseases, in order to help evaluate and formulate educational efforts and improve patient care.

The Montana Central Tumor Registry is a member of the Rocky Mountain Cancer Data System (RMCDS) based in Salt Lake City, Utah. Membership in RMCDS provides Montana with computer software, technical assistance, statistical reports, and data back-up. As a result, the MCTR distributes monthly and annual reports to all participating facilities which reflect their cancer patients' experience.



In 1985, the MCTR installed an online computer in Helena, linked to the main computer in Salt Lake City. This allows for more efficiency in that the MCTR staff now directly inputs, changes, updates, or removes cases.

Participation in the regional data system links Montana with a nationwide cancer patient surveillance program which provides vital information for research into the cause, treatment and prevention of cancer.

In addition, follow-up letters are automatically generated by RMCDS for the Central Registry. The follow-up letters help to assure a systematic follow-up of cancer patients via their private physicians. Data from the Records and Statistics Bureau are also used to record death information for patient follow-up.

Hospital registry reference dates vary because some hospitals began abstracting in 1979, some in 1980, etc. This report is an effort to present the data collected so far and to illustrate the capabilities of Montana's cancer reporting system. The most complete reporting has occurred since 1981, when the cancer reporting requirements went into effect. This accounts for part of the increase in cases in 1981 and 1982, thus the relative stability of rates noted for 1982-1986.

As of March, 1987, a total of 20,027 cases were on the registry. Of these cases, 1,120 were out-of-state residents, mostly from Wyoming, who sought diagnosis and treatment in Montana hospitals. The out-of-state residents are excluded from this report.

## ADVISORY BOARD

The Montana Central Tumor Registry Advisory Board was established in 1982 to provide consultation and make recommendations for the program. Some examples of this effort include: providing guidelines for coding of cancer recurrence, encouraging hospitals to accomplish complete reporting, promoting cancer reporting by private clinical laboratories, recommending and approving procedures for lost patient follow-up, supporting legislation concerning cancer reporting laws, and developing cancer studies.

The current Advisory Board members are listed below:

David M. Young, D.V.M., Ph.D.  
(Chairman)  
Montana State University, Bozeman

Frank Newman, Ph.D.  
MT Area Health Education Center  
Bozeman

Martin Hamilton, Ph.D.  
Montana State University, Bozeman

Sharon Pettit, R.N., R.R.A.  
Utilization Review/Quality Assurance  
VA Medical Center, Fort Harrison

Neel Hammond, M.D.  
Billings

Donald Roberts, D.D.S.  
Billings

Robert E. Kellenberger, M.D.  
Kalispell

Martin D. Skinner, M.D.  
Helena

Mary Kerins, R.R.A.  
Helena

E. Stan Wieczorek  
American Cancer Society, Billings

Tony Wellever  
Montana Hospital Association, Helena

### Ex-Officio Members:

Sidney Pratt, M.D.  
Chief, Clinical Programs Bureau  
State Dept. of Health  
and Environmental Sciences

Judith Gedrose, R.N., M.D.  
State Epidemiologist  
State Dept. of Health  
and Environmental Sciences

William Haggberg, D.D.S.  
Dental Officer  
State Dept. of Health  
and Environmental Sciences

## SPECIAL STUDIES

MCTR data has been used for specific cancer studies related to environment, marketing, treatment, grant applications for cancer research, certificate of need applications, and definition of hospital service areas.

In addition, the MCTR has also responded to inquiries regarding computer software for tumor registries, establishment of central registries and cancer reporting requirements.

Listed below are requests that the registry has received, requiring the use of our tumor registry data. No personally identified information, either by hospital or patient name, is released to persons or organizations who are not authorized to receive such information.

1. Tumor sites reported for Beaverhead Co. for the American Cancer Society Unit in Dillon.
2. Yellowstone Co. incidence data for the Yellowstone Co. Planning Dept. in Billings.
3. Selected incidence data (Montana and Wheatland Co.); statistics on chronic myelogenous leukemia, all counties, for a physician in Billings.
4. Cancer incidence per county and utilization of radiation therapy for a consulting/marketing firm in Houston, Texas.
5. Age-specific and age-adjusted incidence rates, 1981-1985, for a biostatistician in a research program at Montana State University, Bozeman.
6. Montana and Deer Lodge Co. cancer incidence rates requested by the Environmental Sciences Division, State Health Dept.
7. Gallatin Co., Yellowstone Co., and State cancer incidence and survival rates requested by the Biomedical Research Program, Bozeman.
8. Number of cases by tumor site (1985-1986), Broadwater, Jefferson, and Lewis & Clark Counties requested by St. Peter's Community Hospital, Helena.
9. 1985 lung cancer statistics for the Health Risk Reduction Program, State Health Dept.
10. Statistics for planning and marketing a new facility for the Northern Rockies Cancer Center, Billings.

11. Wyoming cases reported to the MCTR by Montana hospitals requested by the Wyoming Central Tumor Registry.
12. Idaho cases reported to the MCTR by Montana hospitals requested by the Idaho Central Tumor Registry.
13. Mesothelioma cases for a 5-state cooperative study by the Rocky Mountain Cancer Data System, Salt Lake City, Utah.
14. State and Sweet Grass Co. cancer incidence rates for a health and marketing firm in Billings.
15. Sanders Co. age-adjusted incidence rates and site/stage statistics for the Plains Branch of the Cancer Society.
16. Pondera Co. age-adjusted incidence rates for a health professional in Conrad.
17. Statistics for county of residence and age-adjusted incidence rates -- Chouteau Co., Fort Benton, State -- for the Chouteau Co. Unit of the Cancer Society.
18. Selected cancer cases by site, county of residence and histologies for St. James Community Hospital, Butte.
19. Yellowstone Co. and State incidence rates, Yellowstone Co. mortality rates for a nursing student preparing a research paper.
20. 1980-1985 cases by year of diagnosis, site, and county of residence, reported from Billings facilities, requested by a Billings oncologist for a grant application.
21. 1982-1985 statistics by site and year of diagnosis for Jefferson, Broadwater, and Lewis & Clark Counties; Lewis & Clark Co. age-adjusted incidence rates requested by a Georgia oncologist considering relocation.
22. Statistics by site and year of diagnosis for Laurel and Yellowstone Co. requested by Big Sky Hospice.
23. Specified cancer data by site, stage, year of diagnosis and follow-up status for Columbus Hospital's Radiation-Oncology Program.
24. 1983-1985 statistics regarding county of residence and treatment types for a Minneapolis insurance company.
25. Intra-abdominal Non-Hodgkin's lymphomas for a physician's study in cooperation with the Blue Mountain Oncology Program, Walla Walla.

26. 1979-1986 lung cancer statistics; incidence rates for the State, Deer Lodge Co., and 5 health districts requested by the Public Education Committee of the Cancer Society.
27. Specified statistics, including incidence rates for the State, Yellowstone and Missoula Counties, for a CCOP study by the Billings Oncology Project.
28. Statistics concerning carcinoma in situ of the cervix requested by Central Montana Hospital, Lewistown.
29. Cancer incidence statistics for each county requested by a State Legislator.
30. Statistics for 1983-1984 State and Yellowstone Co. cases for Deaconess Medical Center, Billings.
31. Cancer data for 5-county area, including Montana residents seen in Washington, Colorado, and Utah, for a survey conducted by Kalispell Regional Hospital.

## ESTIMATIONS OF THE DEGREE OF REPORTING COMPLETENESS

The degree of reporting completeness remains an essential element in assessing the significance of the reported data. The more complete the data base reported, the more clearly one can draw conclusions about the observed differences in occurrence or distribution, and postulate significant influences, e.g. stage at diagnosis reflecting the degree of screening of asymptomatic individuals, and how medical economies may improve such screening by medical offices or impede access to screening.

The first, and perhaps most obvious, method is to compare Montana incidence rates to national figures. Estimates from the federal SEER data have already been presented. The results do not present a clear picture, but do contain some consistency: Montana, for the years 1982-1985 (when reporting seems the most consistent) counted 9,576 cases of cancer as compared to an expected incidence of 10,750; this is 10.9% fewer cases. In a similar fashion, cancer of unknown or undefined primary was reported 6.9% fewer times; cancer of female breast, 10.4% fewer cases; cancer of the lung, 6.5% fewer cases; cancer of the colon and rectum, 25% fewer cases. However, cancer of the prostate was reported 22.9% more often than expected; this incidence in more recent years was only slightly higher than expected, suggesting that the earlier incidence figures may have been inflated by reporting of cases actually diagnosed earlier, i.e., a reporting artifact of a different kind. Cancer of other sites are reported also at variable rates, usually lower: Bladder, 6.5% higher; Corpus uteri, 24% lower; Cervix uteri, 36% lower; Lymphomas, 2.0% lower; Leukemias, 20% lower; and Pancreas, 18% lower. An impression of consensus in all these rates would be around 10% fewer cases than expected by national age-adjusted figures.

Another method of assessing the completeness of reporting is to compare the total number of cases to the size and sophistication of the medical community, as estimated by the number of hospital beds. Using the number of cases reported in 1982 through 1985 from each hospital in Montana, and using the number of "approved" beds per hospital (excluding obstetric, psychiatric and pediatric), one can derive a figure which approximates the number of cases reported per 100 hospital beds per year.

Hospital Size (No. Hospitals)	Ratio
I Hospitals with 0-39 beds (30)	30 cases/100 beds/year
II Hospitals with 40-89 beds (13)	56 cases/100 beds/year
III Hospitals with >89 beds (12)	112 cases/100 beds/year

(5 hospitals with fewer than 39 beds did not report any cases during this period.)



The twelve large hospitals (Group III) serve eight communities. The range of reported cases per bed ratios ranged from 57 to 196. Communities with more than one hospital tended to have clearly different ratios for the two hospitals, reflecting the fact that one hospital will usually be preferred for oncology cases. Two smaller communities that serve as small referral centers have higher ratios (138 and 196). Two smaller hospitals of this group that do not usually serve as referral centers have lower ratios (65 and 68). Thus, from the larger Montana hospitals where reporting is usually the most up-to-date and (from informal surveys) most complete, a ratio of 100 (approximately 1 case per hospital bed per year) appears to be complete reporting.

The lower reported incidence from the medium-sized hospitals (Group II), and even lower incidence from the smaller hospitals (Group I) presents a problem in interpretation. Part of the explanation is the tendency for many persons to present to a larger hospital in a larger community for more serious illnesses, and part is the greater likelihood of a case being reported more promptly from the larger hospital.

If the 2,687 cases (Table 2) expected each year were distributed evenly by the approximate 3,300 hospital beds in Montana, then the ratio would be 81 cases/100 hospital beds/year. The larger communities are clearly reporting more than "their share," and thus reporting from these communities, by and large, is quite complete -- probably as close to 100% as we can realistically expect.

Information from tumor registries in nearby states indicates that the degree of "under-reporting" due to people going out of state is apparently under 5%. Some under-reporting in small hospitals may be due to lack of resources. Small medical records departments are already burdened by federal and state record-keeping requirements and may attach a lower priority to tumor registry reporting.

In support of this being under-reporting are the results of a closer analysis of the ratios for each of the Group II hospitals. Those hospitals with somewhat more beds (60-89 beds) have ratios around 100. Two hospitals had no data reported for 1985, suggesting delayed reporting since the ratios for the three years of data were 90 and 73. The ratios from the remaining Group II hospitals were significantly lower.

Turning to the data from the hospitals with fewer than 40 beds (Group I), and computing similar ratios for any hospital reporting more than 20 cases over the four-year period, we find a number of hospitals with ratios approaching 100.

Fourteen of the 30 Group I hospitals had more than 20 cases reported for the four-year period; 10 of the 14 had ratios of 55 to 86, and the other 4 were less than 40. This again suggests a clustering of cancer patients in certain hospitals where the reported occurrence fits with the reported experience of larger hospitals.

Thus, this approach yields conclusions that reporting is relatively quite complete, and that the degree of under-reporting probably represents an occasional missed case in the smaller (Group I and II) hospitals, and significant delays in reporting (the several hospitals with no data for 1985).

Another way of demonstrating the reporting delay can be derived from comparing the completeness of reporting by time interval.

TABLE 1  
REPORTING COMPLETENESS BY HOSPITAL SIZE AND TIME INTERVAL

	Group I	Group II	Group III	Total
(a) No. of hospitals	35	13	12	60
(b) No. of beds (%)	631	693	2070	3394
(% of Total)	(19%)	(20%)	(61%)	(100%)
MCTR Records as of 7/7/87				
(c) No. of cases reported for 1982-1985	751	1563	9236	11,550
(% of Total)	(7%)	(14%)	(80%)	(100%)
(d) Avg. No. cases per year (d) = (c)/4	188	391	2309	2888
(e) Avg. No. Cases per year per 100 beds (e) = 100 (d)/(b)	30	56	112	85
MCTR Records as of 9/25/86				
(f) No. of Cases reported for 1982-1985	575	1309	8266	10,150
(g) Percentage of 7/7/87 Registered No. of Cases (g) = 100 (f)/(c)	77%	84%	90%	88%

Table 1 shows that 80% of the cases in the MCTR have been reported by the 12 largest hospitals in Montana. Those 12 hospitals contain 61% of the hospital beds. As shown in Row (e) of Table 1, on a per 100 beds base, the large hospitals are reporting four times as many cases as are the smaller hospitals and twice as many as the medium-sized hospitals.



To observe the extent of slow registrations, consider rows (f) and (g) of Table 1. The summary of 1982-1985 cases reported by September, 1986, is much more complete for large than for small hospitals. Nearly 25% of the cases reported by small hospitals came in during the 9 months preceding July, 1987.

Because most of the cancers are reported by the large hospitals, under-reporting by small hospitals has a smaller effect on Montana statewide incidence rates than on rates for health planning districts or counties. Reported incidence rates for a county may be much too low if the case counts come mainly from small and medium-sized hospitals.

A third approach is to compare the average annual incidence for cancer of various sites, with the estimates published annually by the American Cancer Society (ACS). These figures were taken from Cancer Statistics, 1986, page 14.

TABLE 2

Cancer Site	ACS Estimates	Annual Avg. MT	Expected No.
All Sites	3,000	2,394	2,687
Female Breast	350	329	367
Colon & Rectum	400	338	400
Lung	400	348	372
Prostate	425	295	240
Pancreas	80	66	81
Uterus	150	122	179

The ACS estimates, based on data from the National Cancer Institute SEER Program (for 1977-1981) appear somewhat generous, and do not appear to fit the Montana distribution as well as more specific use of the same SEER data, age-adjusted for Montana demographic data.

#### SUMMARY

Although some under-reporting can be expected and measured, the current data suggest that the MCTR database is 90% complete. Some of the under-reporting is attributed to missed cases and to reporting delays more likely seen in the smaller community hospitals.

TEN LEADING SITES OF CANCER  
FOR MALES AND FEMALES  
MONTANA, 1985 (% of TOTAL CASES)



Prostate	23%
Lung	18%
Urinary Bladder	10%
Colon	9%
Rectum	6%
Unknown or Other	4%
Non-Hodgkin's Lymphoma	3%
Kidney and Renal Pelvis	3%
Pancreas	3%
Stomach	2%

Prostate cancer is the most common cancer diagnosed in males followed by lung cancer. This is the reverse of what is seen in U.S. Data.\* In the United States, prostate cancer accounts for 19% of all male cancer diagnoses, compared to 23% in Montana. Lung cancer in the United States accounts for 22% of all male cancer diagnoses, compared to 18% in Montana.



Breast	28%
Lung	12%
Colon	11%
Corpus Uteri	6%
Unknown or Other	5%
Ovary	4%
Cervix Uteri	4%
Rectum	3%
Non-Hodgkin's Lymphoma	3%
Urinary Bladder	3%

In females, the incidence of breast cancer is slightly higher in Montana (28%) than what is seen in the U.S. data (26%). Lung cancer diagnoses fall into second place in Montana at 12% compared to 10% for the U.S.

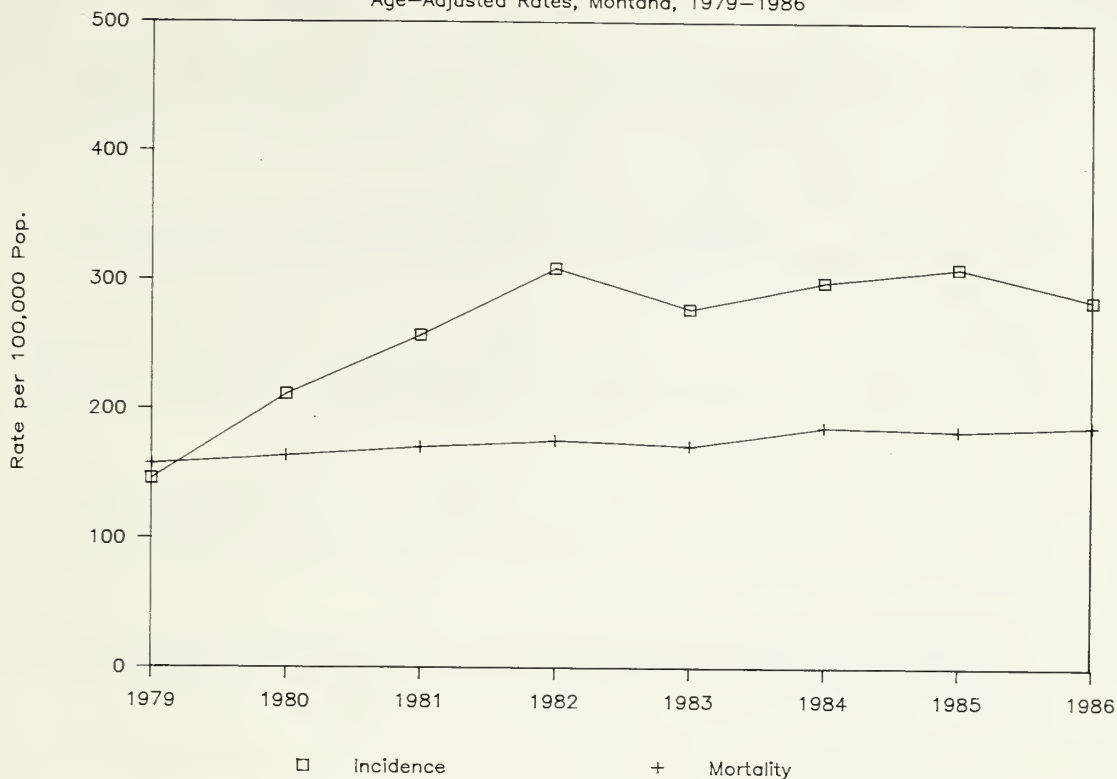
If female cancers of the colon and rectum were combined, they would account for 14% of the cases thus falling into second place instead of third in Montana statistics. This would be in line with U.S. data, which shows female colorectal cancers in second place at 16%.

These sites account for approximately 79% of the total cancer cases reported for 1985.

\*U.S. data is obtained from the American Cancer Society: Cancer Facts and Figures, 1985; American Cancer Society, Inc., 1984.

# CANCER INCIDENCE VS MORTALITY

Age-Adjusted Rates, Montana, 1979-1986



Cancer incidence rates reflect the cases reported to the Central Registry. Cancer mortality rates are compiled using data obtained from death certificates filed with the Records and Statistics Bureau. The rates are based on the number of cases per 100,000 population, standardized to Montana's 1980 census.

The increasing incidence rates between 1979 and 1982 reflect the Registry's "start-up" period when additional hospitals began participating in the registry program. By 1982, the cancer reporting law had been established which required hospitals to report their cancer cases to the MCTR.

## DATA AND DEFINITIONS

All Sites exclude cancer in situ of the cervix, non-melanoma of the skin, and benign brain tumors.

The age at diagnosis graph represents the percentage of cancer patients for a particular site, by sex, in each age group.

The cumulative percent of cases by age graph represents the percent of cancer patients who fall below a specified age limit.

The survival curves depicting end results by stage of disease are observed survival rates, which reflect cancer mortality as well as deaths due to all other causes. The expected (normal) life curve has been calculated using the exact age and sex distribution of the particular group of cancer patients, calculating their survival as if they did not have cancer.

The relative survival rates adjust for normal mortality and approximate the survival rate of cancer cases with other causes of death removed. The relative survival rate is the proportion of patients surviving the specific cancer under study.

The stage of disease at diagnosis graph indicates the percentage of cancers diagnosed at each stage. The stage of disease is based on all available data, including examination of x-rays, operation reports, pathology reports, etc.

### IN SITU:

A tumor that fulfills all of the criteria for malignancy except invasion.

### LOCALIZED:

A tumor that appears to be confined entirely to the organ of origin.

### REGIONAL:

A tumor that has extended beyond the limits of the organ into

- 1) the surrounding organs or tissues by direct extension,
- 2) regional lymph nodes by metastasis, or
- 3) a combination of 1 and 2, but appears to have spread no further.

### DISTANT:

A tumor that has spread to parts of the body remote from the primary tumor.

### UNKNOWN OR UNSTAGED:

There is insufficient information to allow for accurate staging.

The listing of most frequent histologies indicates the histologies that are reported most often for each specific site according to Montana case information.

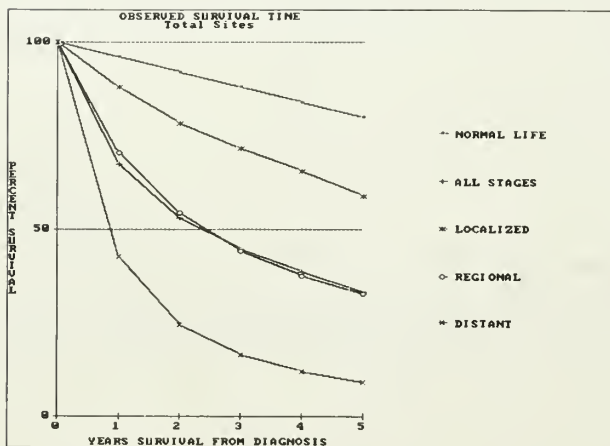
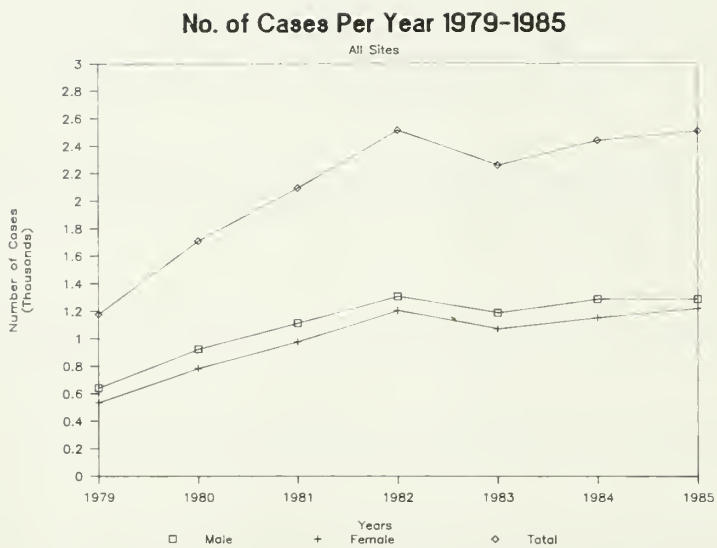
The observed incidence rate is the actual number of cases by site and sex in the designated Montana population.

The expected incidence rate uses the rate obtained from the Surveillance, Epidemiology and End-Results Reporting (SEER) program (U.S. 1977 rate) by age group, site and sex and applies these data to the designated Montana population by age group, site and sex.

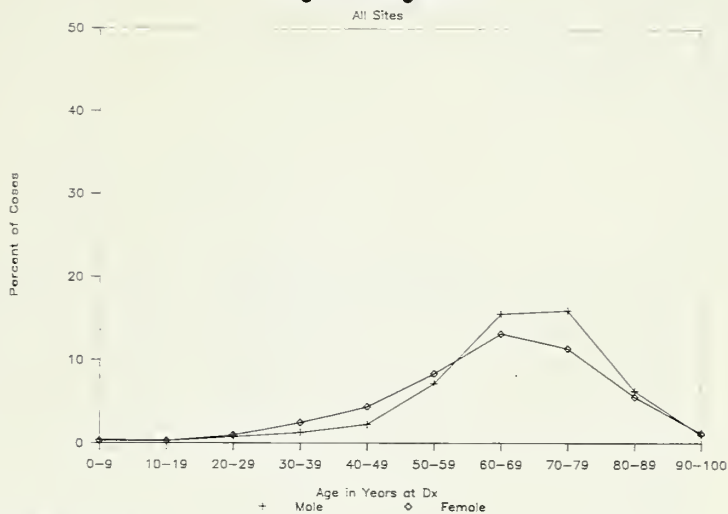
The age-adjusted incidence rate represents the number of new cases per 100,000 population per year, age adjusted to Montana's 1980 census figures. The U.S. incidence rates are age-adjusted to the 1970 U.S. population for white males and females.

# ALL SITES COMBINED

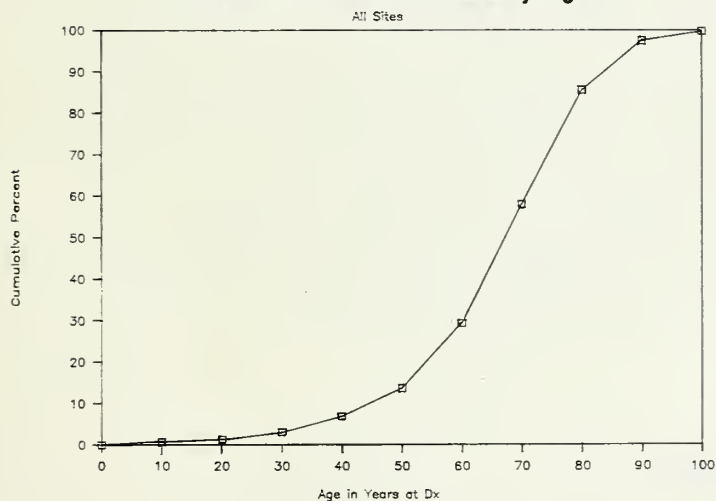
17,953 Cases



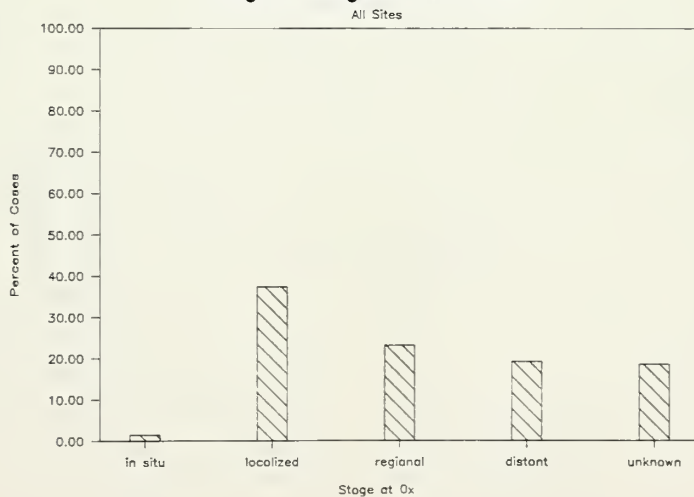
## Age at Diagnosis



## Cumulative Percent of Cases by Age



## Stage at Diagnosis 1979-1985

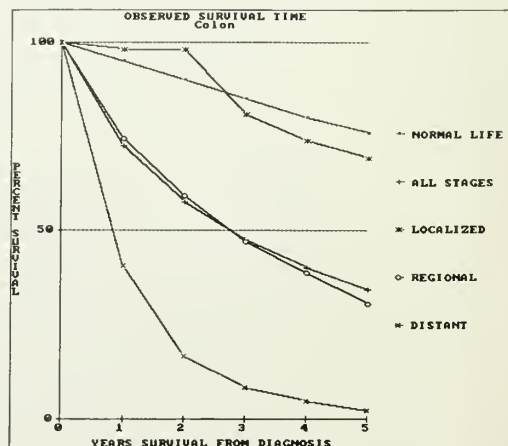
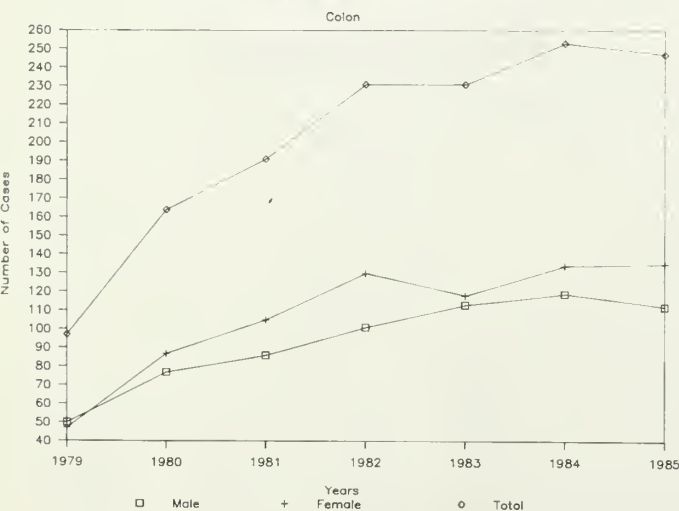


## COLORECTAL CANCER

The annual recorded incidence of colon cancer in Montana (excluding rectal) is somewhat lower than the expected age-adjusted rate of 278.5 cases per year, perhaps reflecting some under-reporting. Over 40% of cases are detected after regional spread has occurred, but only about 30%, or one in three, is detected in a localized stage. These figures can be changed with more widespread use of screening for occult blood and of flexible sigmoidoscopy -- both readily available office procedures. Better survival with colon cancer depends heavily on early detection. Surgical removal of the tumor and surrounding tissue is the chief therapy, and chemotherapy and radiotherapy have little to offer at this stage of our knowledge.

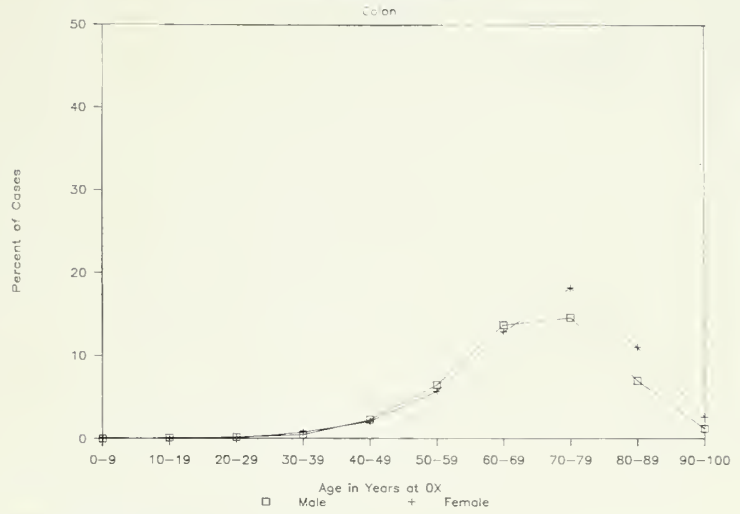
Rectal cancer, although reported separately, follows much the same pattern. There is a higher percentage of diagnosis when localized to the rectum and rectosigmoid, probably reflecting the anatomic fact of being closer to the surface and more likely to cause symptoms early. There is a correspondingly lower percentage diagnosed after regional spread, but the 5-year survival is only a little better (for all stages). However, for variety of reasons, reflecting probably social factors as well as the medical care system, survival with local disease is actually better with colon than with rectal (69% versus 60%).

No. of Cases Per Year 1979-1985

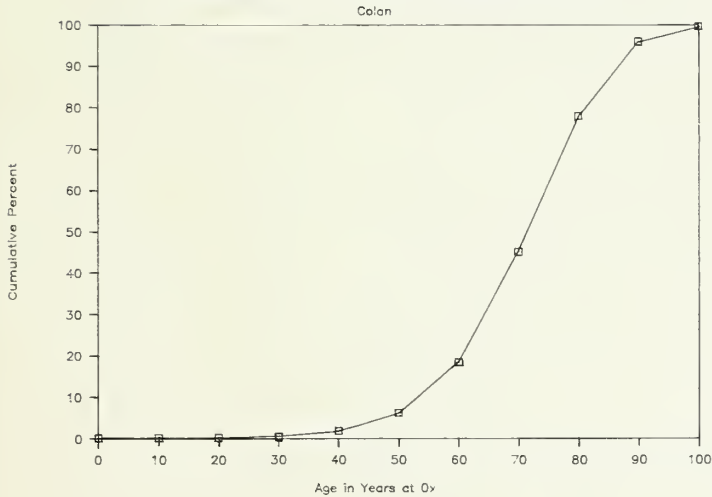




## Age at Diagnosis



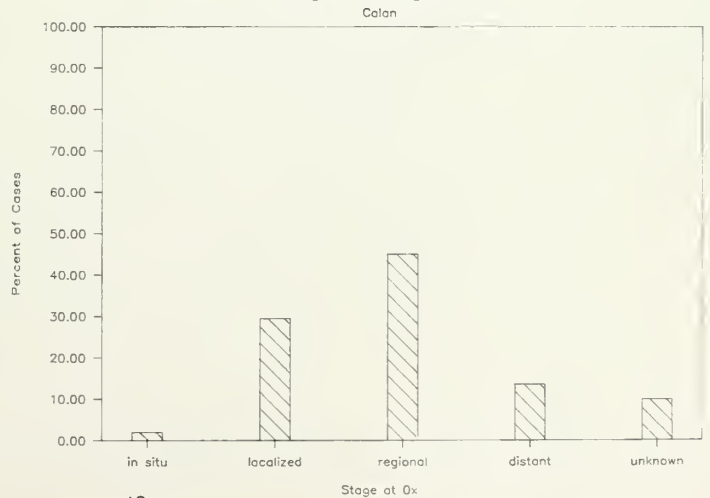
## Cumulative Percent of Cases by Age



### MOST FREQUENT HISTOLOGIES

Adenocarcinoma	73.8%
Mucinous Adenoca	8.5%
Malign. Neoplasm	4.9%
Papillary Adenoca	4.4%
Carcinoma, NOS	3.8%

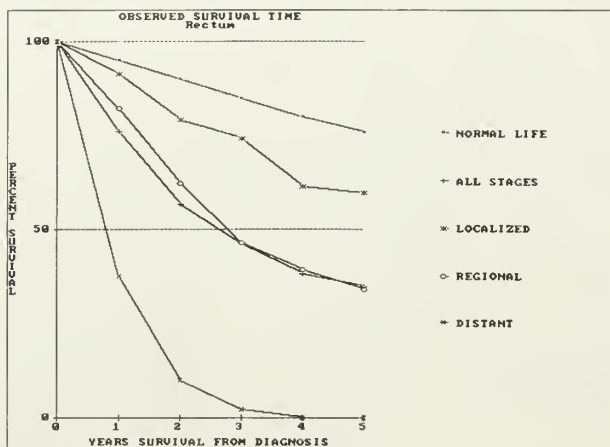
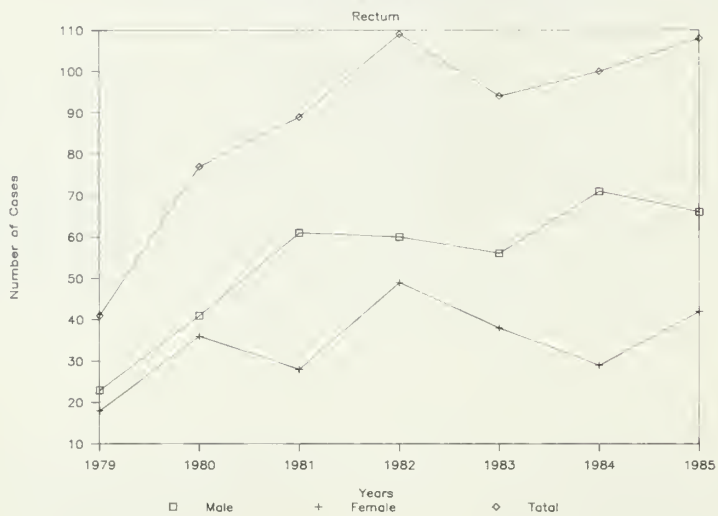
## Stage at Diagnosis



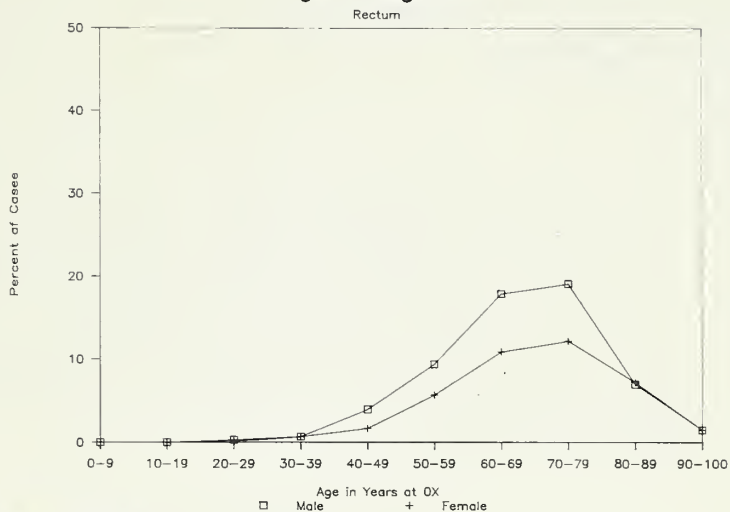
154 RECTUM

754 Cases

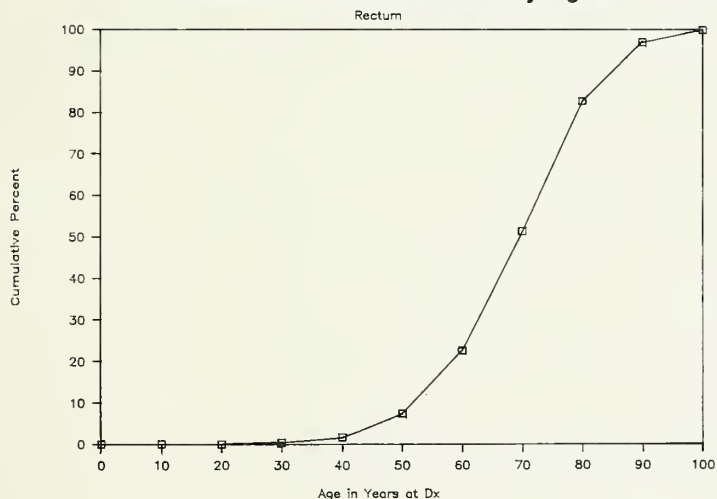
No. of Cases Per Year 1979-1985



## Age at Diagnosis



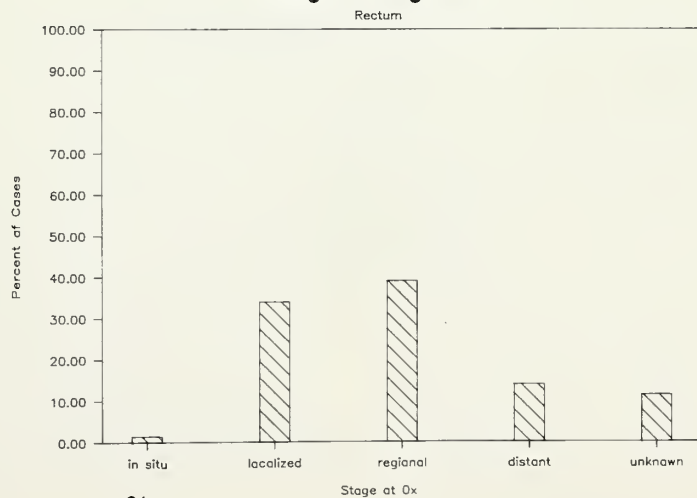
## Cumulative Percent of Cases by Age



### MOST FREQUENT HISTOLOGIES

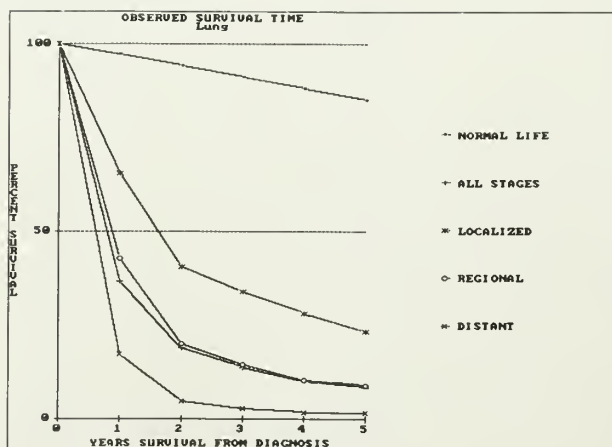
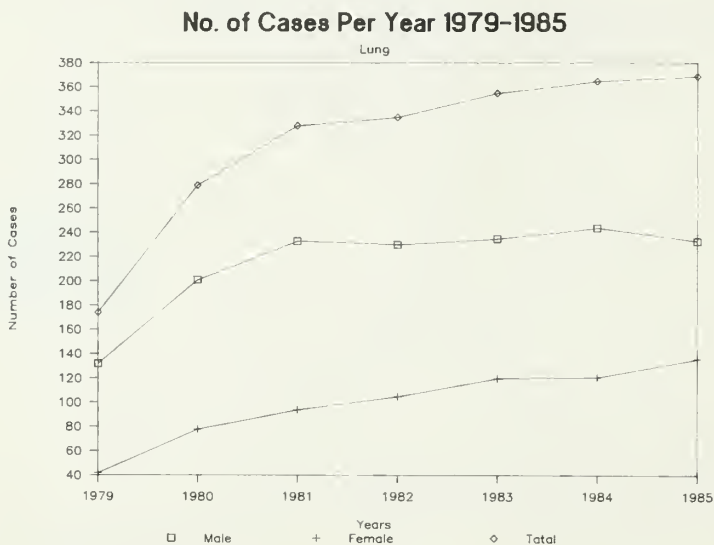
Adenocarcinoma	78.0%
Papillary Adenoca	6.6%
Mucinous Adenoca	5.4%
Malg. Neoplasm	2.9%
Carcinoma, NOS	2.8%

## Stage at Diagnosis

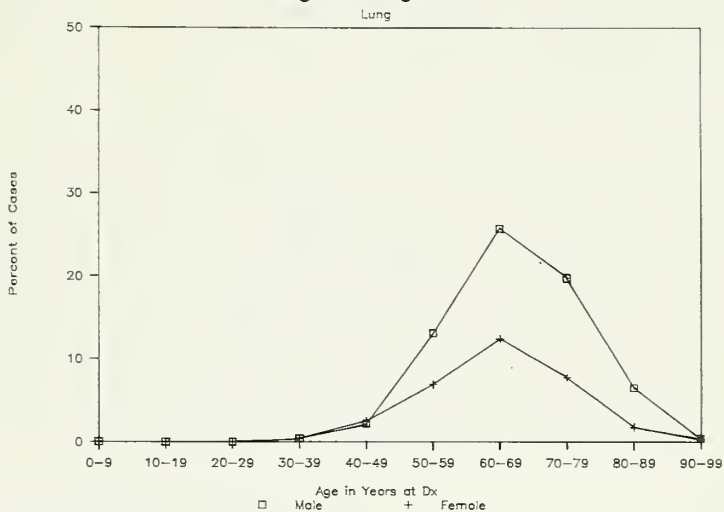


## LUNG CANCER

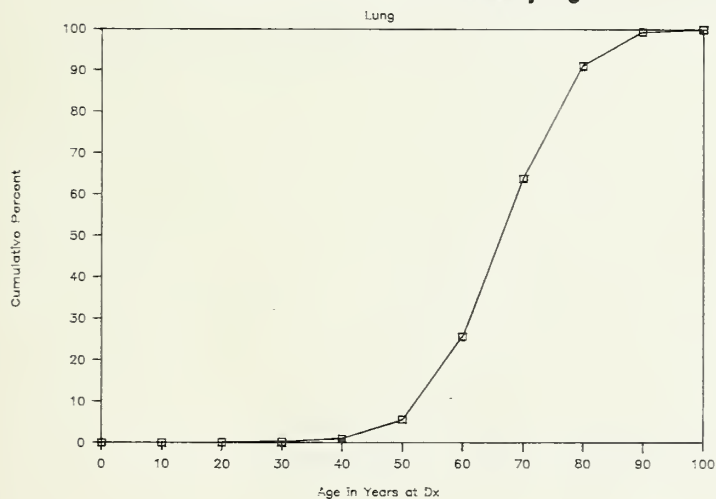
The single most important etiologic and epidemiologic association is cigarette smoking. Recent estimates of cigarette smoking incidence in Montana suggest that smoking is clearly declining in popularity. However, a 15-20 year "incubation period" is probably necessary and current incidence thus represents smoking habits of 20-30 years ago. The Montana incidence rate is somewhat lower than the national rate. This difference may reflect a small degree of under-reporting. It should be noted, however, that the lung cancer incidence rate in Montana women is higher than expected.



## Age at Diagnosis



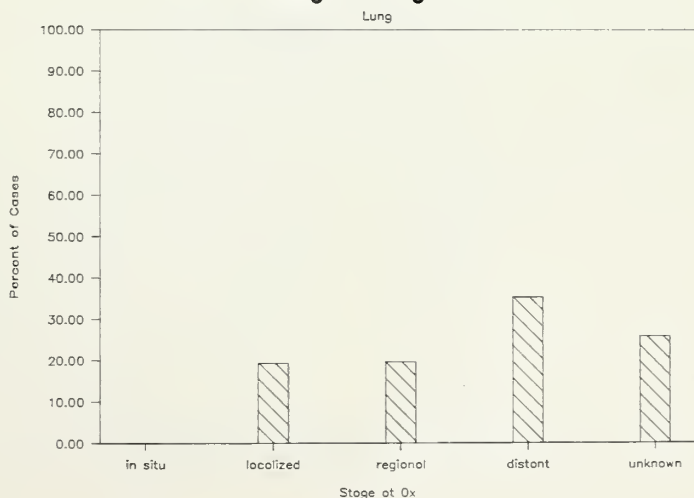
## Cumulative Percent of Cases by Age



## MOST FREQUENT HISTOLOGIES

Squamous Cell Ca	28.5%
Small Cell Ca	22.6%
Adenocarcinoma	17.4%
Carcinoma, NOS	14.0%
Malign. Neoplasm	9.1%

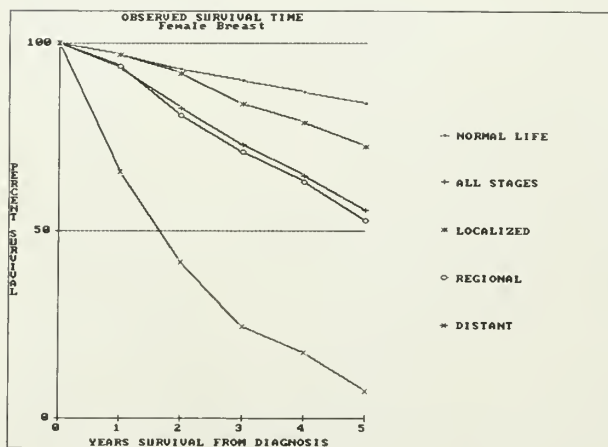
## Stage at Diagnosis



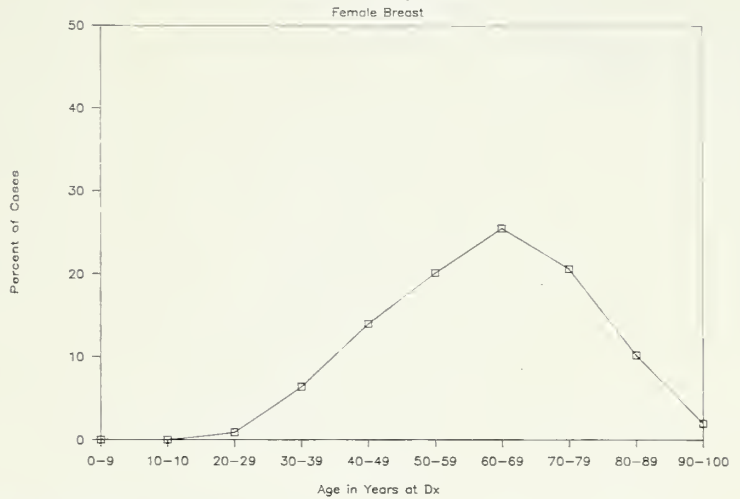
## BREAST CANCER

Breast cancer is the second leading cause of cancer deaths in women. A major factor in survival is the stage at diagnosis. In Montana, a smaller proportion of breast cancers than expected by national statistics are being detected in early stages, i.e. cancer confined to the breast. Early detection can be improved by awareness by women of the need for breast self-examination, periodic medical exams, and mammography. Breast cancer, if confined to the breast at diagnosis, is highly "curable" with long-term, disease-free survival rates of over 90%.

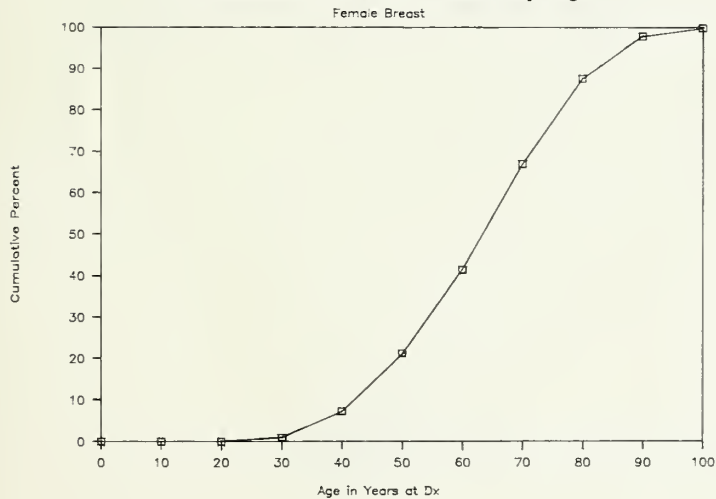
No. of Cases Per Year 1979-1985



## Age at Diagnosis



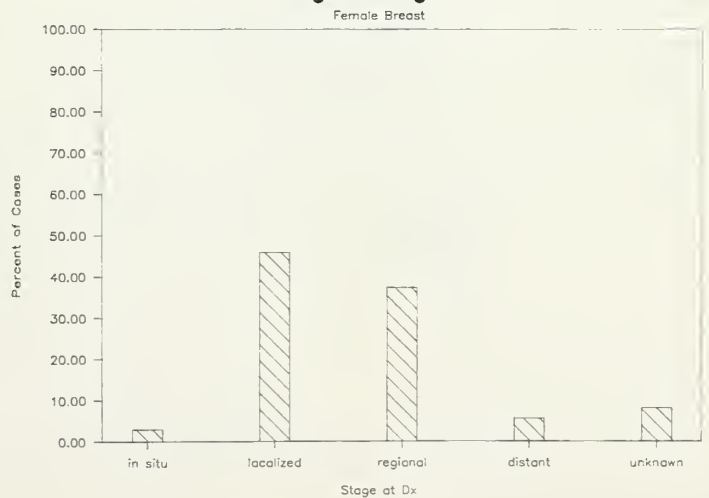
## Cumulative Percent of Cases by Age



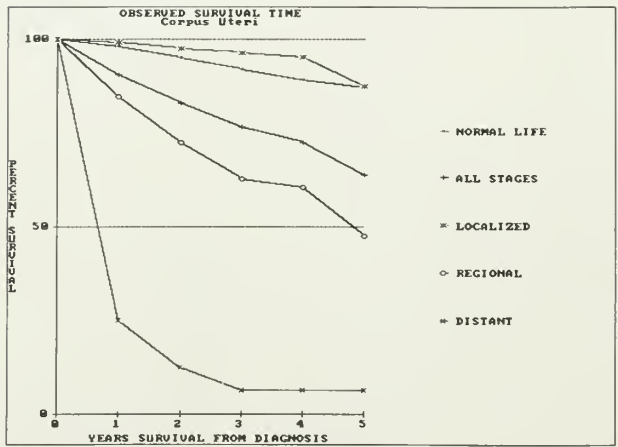
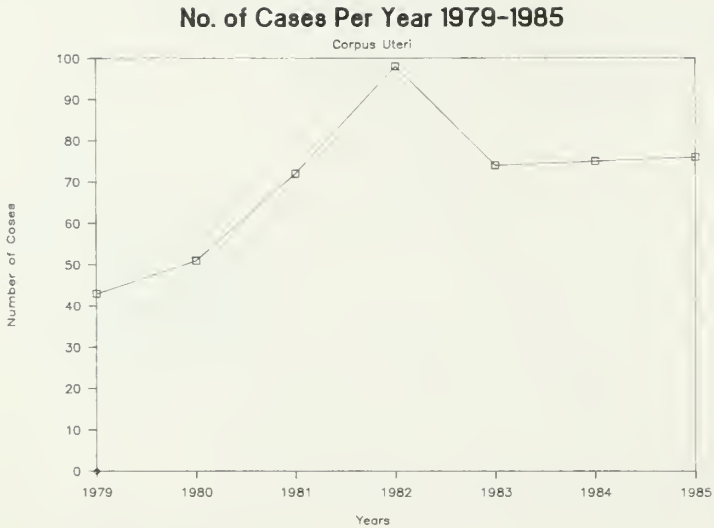
## MOST FREQUENT HISTOLOGIES

Duct Cell Ca	69.3%
Adenocarcinoma	8.9%
Lobular Ca	6.2%
Carcinoma, NOS	4.4%
Malign. Neoplasm	2.8%

## Stage at Diagnosis

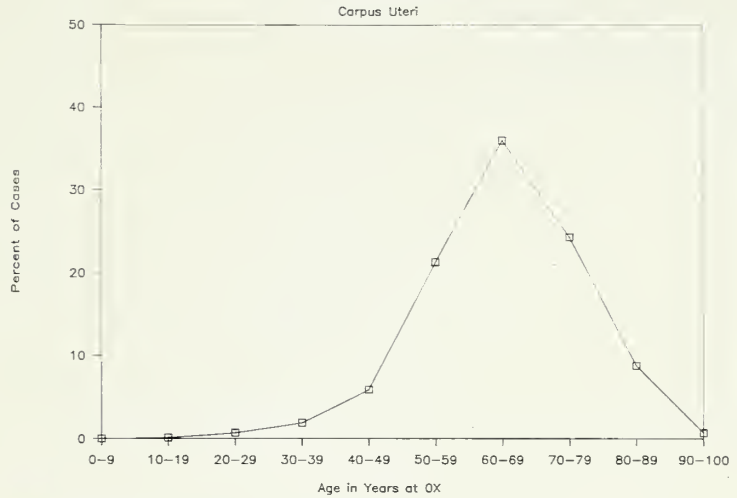


182 CORPUS UTERI  
691 Cases

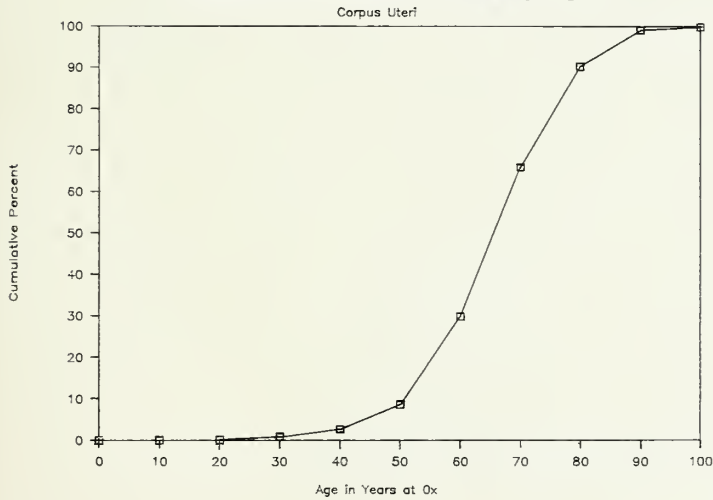




## Age at Diagnosis



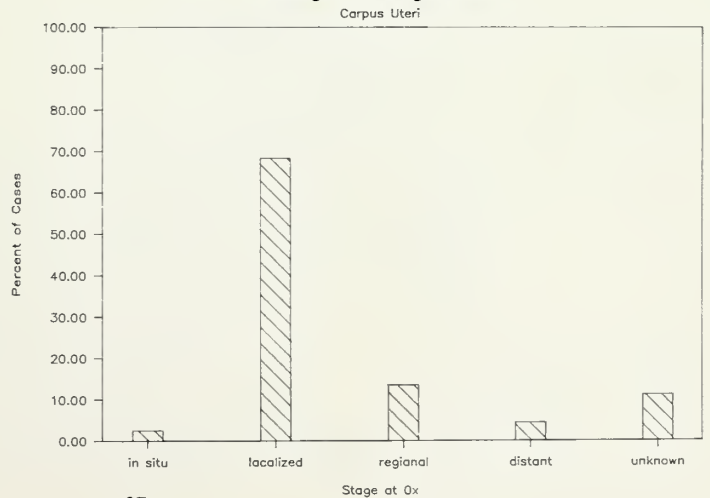
## Cumulative Percent of Cases by Age



### MOST FREQUENT HISTOLOGIES

Adenocarcinoma	72.2%
Papillary Adenoca	5.1%
Endometrioid Ca	3.9%
Carcinoma, NOS	3.3%
Adenoacanthoma	2.5%

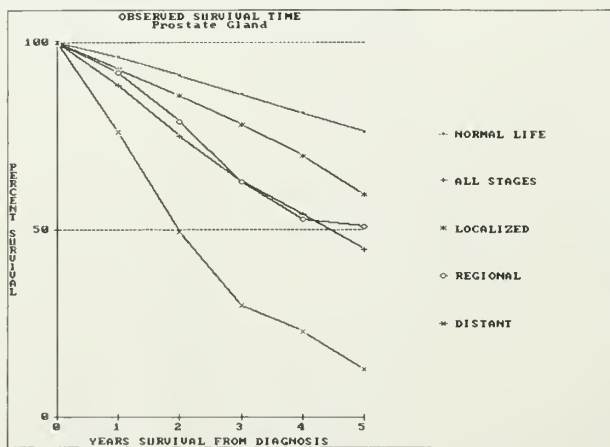
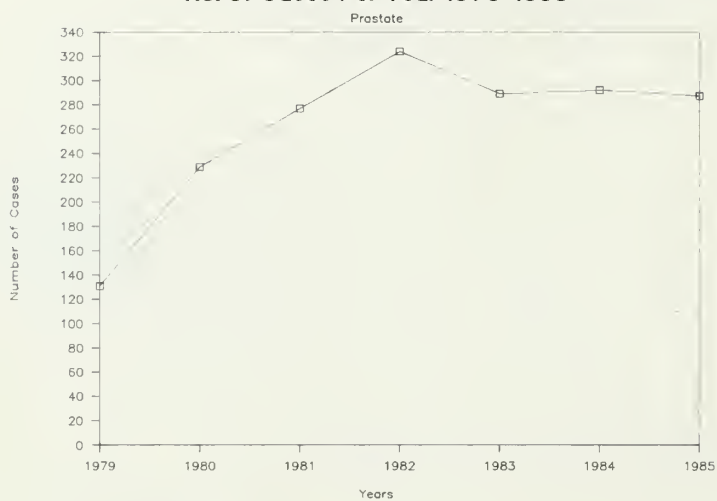
## Stage at Diagnosis



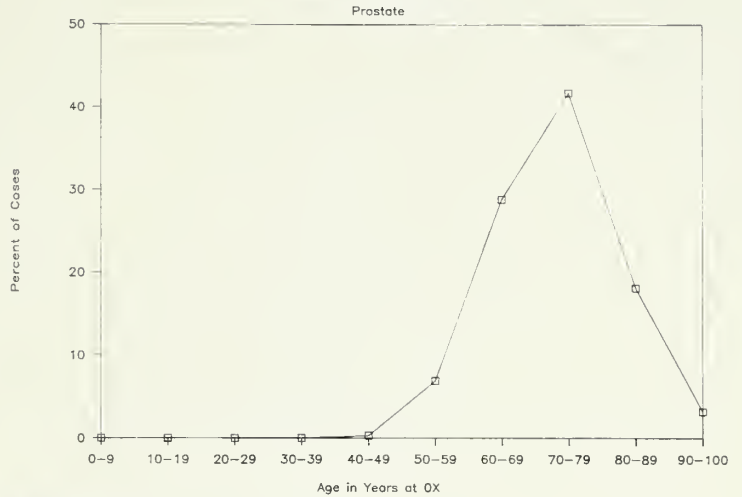
185 PROSTATE

2485 Cases

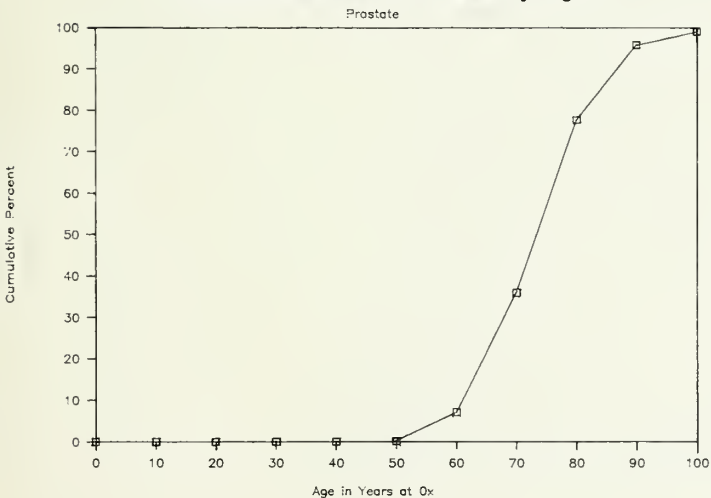
No. of Cases Per Year 1979-1985



## Age at Diagnosis



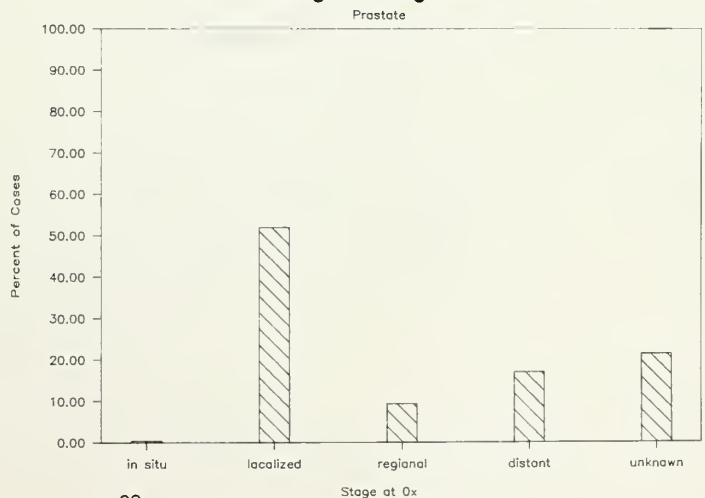
## Cumulative Percent of Cases by Age

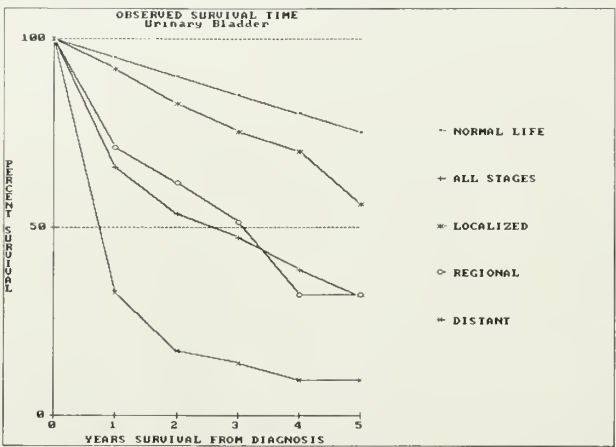
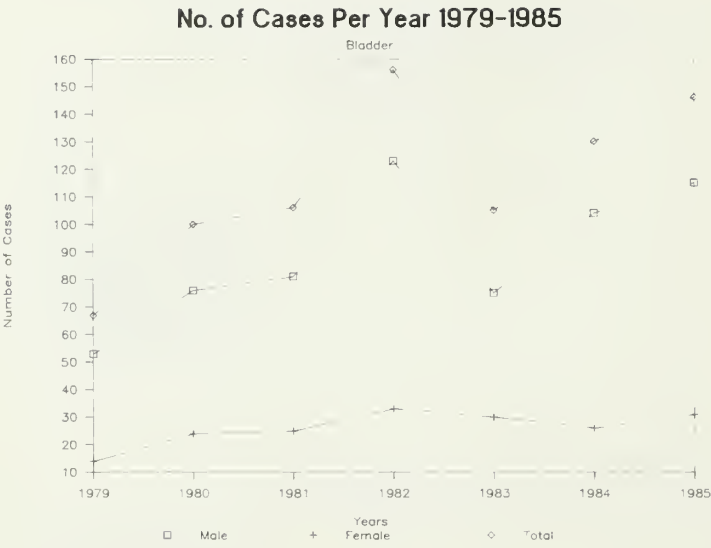


## MOST FREQUENT HISTOLOGIES

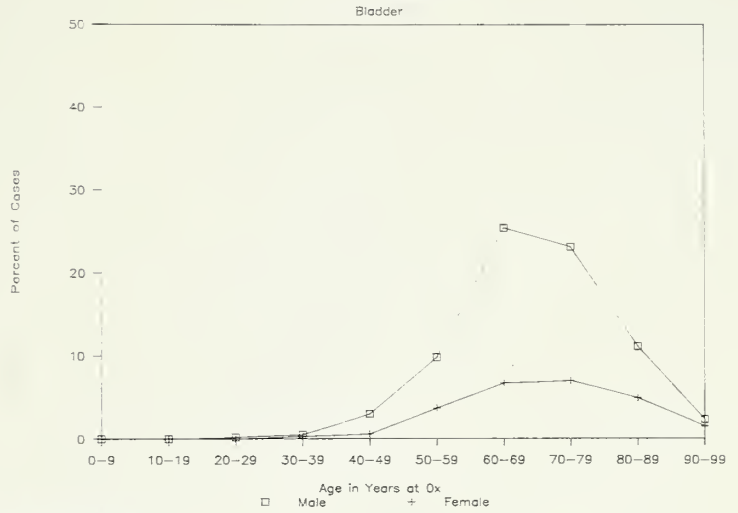
Adenocarcinoma	88.4%
Malig. Neoplasm	5.2%
Carcinoma, NOS	4.1%
Clinical/No Path	.9%
Tran Cell Ca	.4%

## Stage at Diagnosis

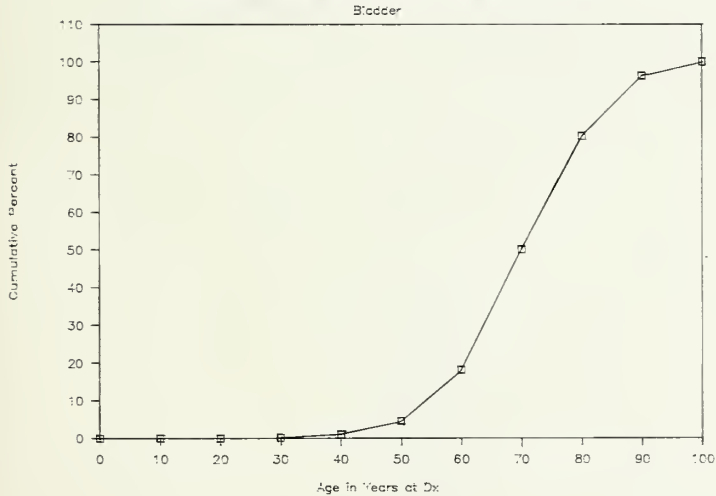




## Age at Diagnosis



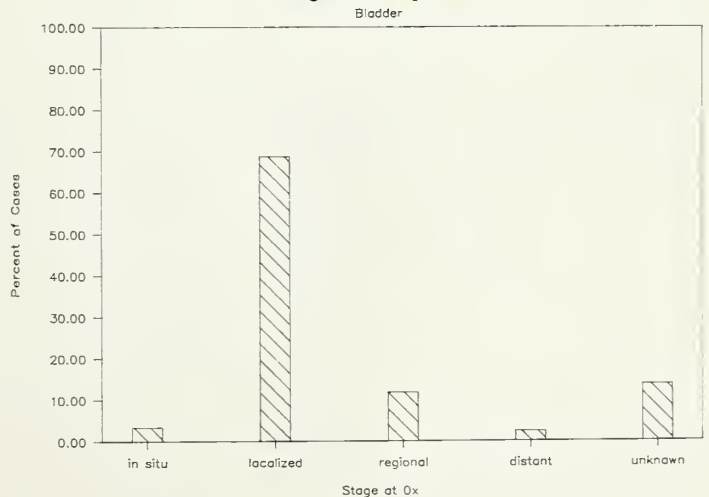
## Cumulative Percent of Cases by Age



### MOST FREQUENT HISTOLOGIES

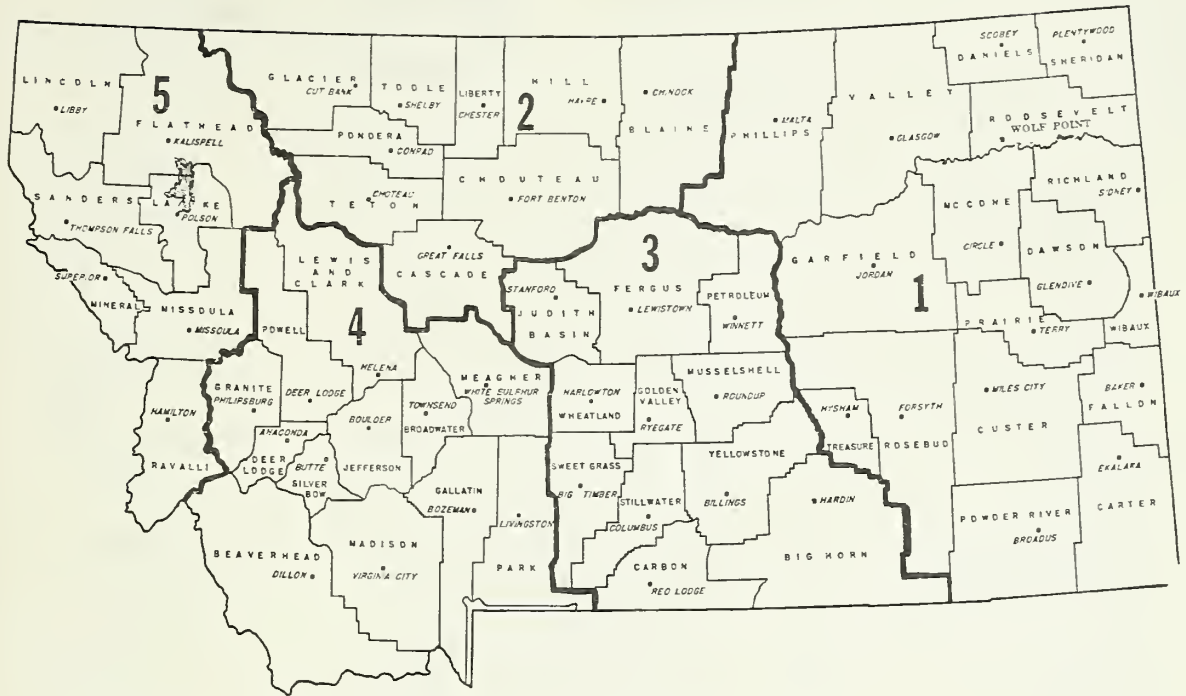
Pap-Tran Cell Ca	46.1%
Tran Cell Ca	42.3%
Papillary Ca, NOS	3.8%
Carcinoma, NOS	2.7%
Squamous Cell Ca	1.7%

## Stage at Diagnosis





# MONTANA HEALTH PLANNING DISTRICTS



DISTRICT #1 Carter  
Custer  
Daniels  
Dawson  
Fallon  
Garfield  
McCone  
Phillips  
Powder River  
Prairie  
Richland  
Roosevelt  
Rosebud  
Sheridan  
Treasure  
Valley  
Wibaux

DISTRICT #2 Blaine  
Cascade  
Chouteau  
Glacier  
Hill  
Liberty  
Pondera  
Teton  
Toole

DISTRICT #3 Big Horn  
Carbon  
Fergus  
Golden Valley  
Judith Basin  
Musselshell  
Petroleum  
Stillwater  
Sweet Grass  
Wheatland  
Yellowstone

DISTRICT #4 Beaverhead  
Broadwater  
Deer Lodge  
Gallatin  
Granite  
Jefferson  
Lewis & Clark  
Madison  
Meagher  
Park  
Powell  
Silver Bow

DISTRICT #5 Flathead  
Lake  
Lincoln  
Mineral  
Missoula  
Ravalli  
Sanders

Observed Versus Expected Cancer Cases in Montana 1991-1995

	Males Only		Females Only		Both Sexes	
	observed	expected	observed	expected	observed	expected
All Sites	6087	7042.5 *	5583	6503.0 *	11672	13437.2 *
Buccal cavity and pharynx	187	323.5 *	87	129.7 *	274	444.3 *
Lip	37	72.1 *	1	7.2 +	38	76.5 *
Tongue	34	55.4 *	23	25.5	57	79.3
Major salivary gland	20	20.1	6	17.3 *	26	36.7
Floor of Mouth	20	36.0 *	14	14.1	34	49.4
Gum and other mouth	24	44.3 *	17	29.9 +	41	74.4 *
Nasopharynx	11	16.5	3	7.0	14	23.2
Tonsil	12	29.1 *	15	14.0	27	42.2
Oropharynx	6	8.9	0	2.8	=	11.4
Hypopharynx	20	31.8 *	7	8.1	27	38.9
Pharynx, other buccal cavity	3	9.0 *	1	3.3	4	12.0
Digestive system	1330	1781.0 *	1152	1504.8 *	2482	3256.2 *
Esophagus	61	108.8 *	23	40.6 *	84	145.8 *
Stomach	154	259.2 *	82	151.0 *	236	384.7 *
Small Intestine	22	17.4	21	16.2	43	33.4
Colon excluding rectum	533	679.7 *	615	718.4 *	1137	1392.3 *
Rectum and rectosigmoid	313	353.7 +	182	263.2 *	495	609.8 *
Anus, anal canal, anorectum	7	9.7	8	15.7	15	25.3
Liver	37	58.8 *	15	29.6 *	52	86.9 *
Gallbladder	11	18.4	25	42.5 *	36	61.8 *
Other biliary	19	30.4 +	14	26.0 +	33	56.1 *
Pancreas	173	226.0 *	158	182.3	331	404.3 *
Retroperitoneum	7	9.0	7	7.8	14	17.4
Peritoneum	4	2.8	1	3.4	5	5.4
Other digestive organs	0	6.3 +	1	6.7 +	1	12.7 +
Respiratory system	1303	1644.7 *	614	504.8 *	1918	2690.4 *
Nasal cavity, sinuses and ear	6	14.9	7	10.3	15	24.6
Larynx	128	156.0 +	27	26.8	155	178.9
Lung and bronchus	1151	1450.7 *	568	460.8 *	1720	1859.3 *
Trachea, pleura, and other	16	20.9	12	6.8 +	28	27.8
Bones and joints	24	18.7	14	13.3	38	31.1
Soft tissue (including heart)	28	45.6 *	36	34.4	64	79.4
Skin (exc. basal and sq. carcinoma)	92	135.6 *	99	132.6 *	191	267.3 *
Melanomas of the skin	71	122.1 *	85	122.3 *	156	243.4 *
Other skin cancers	21	13.2 +	14	10.7	35	24.0
Breast	13	15.3	1583	1761.5 +	6	1836.1 *
Female genital system			920	1214.6 *	920	1254.6 *
Cervix uteri			176	259.3 *	176	267.0 *
Corpus uteri			396	589.8 *	396	609.0 *
Uterus, NOS			39	15.9 *	39	16.4 *
Ovary			264	283.3	264	293.5
Vagina			10	14.9 +	10	15.0
Vulva			21	35.9	21	37.7 *
Other female genital organs			14	15.2	14	15.4



Observed Versus Expected Cancer Cases in Montana 1981-1985 (continued)

	Males Only		Females Only		Both Sexes	
	observed	expected	observed	expected	observed	expected
Male genital system	1549	1363.3 *			1549	1290.0 *
Prostate gland	1456	1269.6 *			1456	1198.5 *
Testis	75	72.9			75	71.3
Penis	14	16.6			14	15.4
Other male genital organs	4	3.9			4	3.3
Urinary system	681	670.4	253	266.6	934	914.0
Urinary bladder	491	476.6	144	160.4	635	619.6
Kidney and renal pelvis	180	171.1	101	93.9	281	260.7
Ureter	8	14.6	7	7.6	15	21.6
Other urinary organs	2	7.4 +	1	4.3	3	11.3 +
Eye	11	16.2	7	14.3	19	31.1 +
Brain and other nervous system	118	120.3	95	87.1	213	206.4
Brain	114	113.5	88	82.3	202	194.5
Other nervous system	4	6.4	7	5.0	11	10.8
Endocrine system	37	59.0 *	92	122.8 *	129	183.1 *
Thyroid gland	28	49.0 *	86	116.6 *	114	167.2 *
Other endocrine	9	9.9	6	6.5	15	15.7
Lymphomas	246	268.1	226	223.4	472	488.6
Hodgkin's disease	63	72.2	53	51.2	116	121.6
Non-Hodgkin's disease	183	195.8	173	171.7	356	365.8
Multiple myeloma	72	86.1	52	73.4 +	124	157.7 *
Leukemias	171	237.7 *	128	170.0 *	299	403.4 *
Lymphocytic	63	101.3 *	40	66.6 *	103	165.9 *
Granulocytic	58	100.2 *	69	80.0	127	178.3 *
Monocytic	8	7.3	1	5.1	9	12.3
Other	42	29.1 +	18	18.3	60	46.1 +
Other, ill-defined & unknown sites	225	257.2 +	225	249.0	450	502.7 +
#Cervix insitu #(not in all sites)			478	833.7 *	478	853.4 *

+ exceeds probability at .95

\* exceeds probability at .99

. observed is more than twice expected

Observed Versus Expected Cancer Cases in Health District #1 1981-1985

	Males Only		Females Only		Both Sexes	
	observed	expected	observed	expected	observed	expected
All Sites	743	948.8 *	608	817.2 *	1351	1739.8 *
Buccal cavity and pharynx	19	43.2 *	3	16.3 *	22	57.4 *
Lip	3	9.7 +	1	0.9	4	9.9
Tongue	5	7.4	2	3.2	7	10.3
Major salivary gland	2	2.6	0	2.1	2	4.6
Floor of Mouth	2	4.8	0	1.8	2	6.4
Gum and other mouth	3	6.0	0	3.8	3	9.7 +
Nasopharynx	0	2.1	0	0.9	0	2.9
Tonsil	2	3.9	0	1.8	2	5.5
Oropharynx	0	1.2	0	0.4	0	1.5
Hypopharynx	2	4.3	0	1.0	2	5.0
Pharynx, other buccal cavity	0	1.2	0	0.4	0	1.6
Digestive system	159	241.5 *	108	191.2 *	267	425.8 *
Esophagus	6	14.6 +	1	5.2	7	19.0 *
Stomach	23	35.3 +	11	19.3	34	50.5 +
Small Intestine	2	2.3	1	2.0	3	4.3
Colon excluding rectum	60	92.4 *	45	91.2 *	105	182.2 *
Rectum and rectosigmoid	36	47.8	21	33.4 +	57	79.6 +
Anus, anal canal, anorectum	0	1.3	0	2.0	0	3.3
Liver	2	7.9 +	1	3.0	3	11.3 +
Gallbladder	0	2.5	4	5.4	4	8.1
Other biliary	5	4.1 +	4	3.3	9	7.4
Pancreas	24	30.7 *	20	23.2	44	52.9
Retroperitoneum	0	1.2	0	1.0	0	2.2
Peritoneum	1	0.3 .	0	0.4	1	0.7
Other digestive organs	0	0.9	0	0.9	0	1.7
Respiratory system	143	220.2 *	81	63.5 +	224	270.5 *
Nasal cavity, sinuses and ear	0	2.0	2	1.3	2	3.2
Larynx	9	20.8 *	3	3.4	12	23.1 +
Lung and bronchus	133	194.4 *	74	58.0 +	207	240.6 +
Trachea, pleura, and other	1	2.8	2	0.9 .	3	3.6
Bones and joints	1	2.4	2	1.7	3	3.9
Soft tissue (including heart)	6	6.0	3	4.3	9	10.1
Skin (exc. basal and sq. carcinoma)	11	17.4	14	16.2	25	33.4
Melanomas of the skin	8	15.6	12	14.9	20	30.4
Other skin cancers	3	1.7	2	1.3	5	3.0
Breast	1	2.1	174	220.8 *	175	236.3 *
Female genital system			92	151.5 *	92	160.9 *
Cervix uteri			18	31.6 +	18	33.3 *
Corpus uteri			44	74.1 *	44	78.9 *
Uterus, NOS			4	2.0	4	2.2
Ovary			23	35.4 +	23	37.6 +
Vagina			2	1.9	2	2.0
Vulva			0	4.5 +	0	4.9 +
Other female genital organs			1	1.9	1	2.0

Observed Versus Expected Cancer Cases in Health District #1 1981-1985 (continued)

	Males Only		Females Only		Both Sexes	
	observed	expected	observed	expected	observed	expected
Male genital system	200	186.3			200	186.3 +
Prostate gland	191	174.7			191	157.3 *
Testis	9	8.8			9	8.4
Penis	0	2.2			0	2.0
Other male genital organs	0	0.5			0	0.4
Urinary system	90	90.7	33	33.8	123	119.1
Urinary bladder	54	64.7	21	20.4	75	81.0
Kidney and renal pelvis	34	22.9 +	12	11.8	46	33.7 +
Ureter	1	2.0	0	1.0	1	2.8
Other urinary organs	1	1.0	0	0.5	1	1.5
Eye	0	2.2	0	1.8	0	4.0 +
Brain and other nervous system	17	15.6	10	10.9	27	26.2
Brain	16	14.7	10	10.3	26	24.7
Other nervous system	1	0.8	0	0.6	1	1.4
Endocrine system	6	7.5	9	14.7	15	22.5
Thyroid gland	6	6.2	8	14.0	14	20.5
Other endocrine	0	1.3	1	0.8	1	2.0
Lymphomas	26	35.0	25	27.7	51	62.1
Hodgkin's disease	5	9.0	2	6.1	7	14.9 +
Non-Hodgkin's disease	21	26.0	23	21.5	44	47.1
Multiple myeloma	6	11.7	4	9.3	10	20.5 +
Leukemias	24	32.1	16	21.6	40	52.6
Lymphocytic	7	13.8	7	8.6	14	21.9
Granulocytic	10	13.4	6	10.0	16	23.0
Monocytic	1	1.0	0	0.7	1	1.6
Other	6	4.0	3	2.3	9	6.1
Other, ill-defined & unknown sites	34	35.0	34	31.7	68	65.9
#Cervix insitu # (not in all sites)			36	95.8 *	36	99.7 *

+ exceeds probability at .95

\* exceeds probability at .99

. observed is more than twice expected

Observed Versus Expected Cancer Cases in Health District #2 1981-1985

	Males Only		Females Only		Both Sexes	
	observed	expected	observed	expected	observed	expected
All Sites	1134	1263.2 *	1077	1182.6 *	2212	2429.4 *
Buccal cavity and pharynx	40	58.3 +	22	23.6	62	80.5 +
Lip	6	13.0	0	1.3	6	13.8 +
Tongue	12	10.0	7	4.6	19	14.4
Major salivary gland	2	3.6	2	3.1	4	6.6
Floor of Mouth	6	6.5	3	2.6	9	9.0
Gum and other mouth	6	8.0	2	5.4	8	13.5
Nasopharynx	0	3.0	2	1.3	2	4.2
Tonsil	2	5.3	5	2.5	7	7.7
Oropharynx	1	1.6	0	0.5	1	2.1
Hypopharynx	3	5.7	1	1.5	4	7.0
Pharynx, other buccal cavity	2	1.6	0	0.6	2	2.2
Digestive system	241	319.2 *	220	273.0 *	461	587.6 *
Esophagus	15	19.5	8	7.4	23	26.4
Stomach	29	46.5 +	20	27.4	49	69.4 +
Small Intestine	7	3.1 +	5	2.9	12	6.0 +
Colon excluding rectum	95	121.7 +	109	130.3	204	251.1 *
Rectum and rectosigmoid	51	63.3	35	47.7	86	110.0 +
Anus, anal canal, anorectum	0	1.8	1	2.9	1	4.6
Liver	10	10.5	3	5.4	13	15.7
Gallbladder	4	3.3	6	7.7	10	11.1
Other biliary	3	5.5	3	4.7	6	10.1
Pancreas	26	40.5 +	30	33.0	56	72.9 +
Retroperitoneum	1	1.6	0	1.4	1	3.2
Peritoneum	0	0.4	0	0.6	0	1.0
Other digestive organs	0	1.1	0	1.2	0	2.3
Respiratory system	247	295.0 *	117	91.8 *	364	337.6
Nasal cavity, sinuses and ear	1	2.7	2	1.9	3	4.5
Larynx	30	28.1	4	4.9	34	32.4
Lung and bronchus	213	260.1 *	108	83.8 *	321	335.7
Trachea, pleura, and other	3	3.8	3	1.2	6	5.0
Bones and joints	5	3.4	2	2.4	7	5.7
Soft tissue (including heart)	3	8.2	7	6.3	10	14.4
Skin (exc. basal and sq. carcinoma)	19	24.5	26	24.0	45	48.4
Melanomas of the skin	15	22.1	22	22.2	37	44.1
Other skin cancers	4	2.4	4	1.9	8	4.4
Breast	3	2.8	309	321.4	312	333.8
Female genital system			186	221.0 +	186	227.6 *
Cervix uteri			33	47.0 +	33	48.3 +
Corpus uteri			82	107.4 +	82	110.7 *
Uterus, NOS			12	2.9 *	12	3.0 *
Ovary			53	51.6	53	53.3
Vagina			1	2.7	1	2.8
Vulva			3	6.5	3	6.8
Other female genital organs			2	2.8	2	2.8

Observed Versus Expected Cancer Cases in Health District #2 1981-1985 (continued)

	Males Only		Females Only		Both Sexes	
	observed	expected	observed	expected	observed	expected
Male genital system	281	243.2 +			281	231.6 *
Prostate gland	265	226.4 +			265	215.2 *
Testis	12	13.1			12	12.8
Penis	4	3.0			4	2.8
Other male genital organs	0	0.7			0	0.6
Urinary system	130	120.3	38	48.4	168	165.0
Urinary bladder	99	85.4	18	29.1 +	117	111.8
Kidney and renal pelvis	29	30.8	17	17.1	46	47.2
Ureter	2	2.6	2	1.4	4	3.9
Other urinary organs	0	1.2	1	0.8	1	2.0
Eye	2	2.9	1	2.6	4	5.7
Brain and other nervous system	20	21.8	21	15.9	41	37.5
Brain	20	20.6	18	15.0	38	35.3
Other nervous system	0	1.2	3	0.9 +	3	2.0
Endocrine system	7	10.7	21	22.2	28	33.1
Thyroid gland	5	8.8	19	21.0	24	30.2
Other endocrine	2	1.8	2	1.2	4	2.9
Lymphomas	49	48.3	39	40.4	88	88.3
Hodgkin's disease	15	13.1	15	9.2	30	22.0
Non-Hodgkin's disease	34	35.2	24	31.1	58	66.1
Multiple myeloma	15	15.4	7	13.3	22	28.4
Leukemias	32	42.9	23	31.0	55	73.2 +
Lymphocytic	12	18.3	4	12.2 +	16	30.2 *
Granulocytic	11	18.0	18	14.5	29	32.3
Monocytic	2	1.3	0	0.9	2	2.2
Other	7	5.3	1	3.3	8	8.4
Other, ill-defined & unknown sites	40	46.2	38	45.3	78	90.9
#Cervix insitu # (not in all sites)			70	147.9 *	70	151.4 *

+ exceeds probability at .95

\* exceeds probability at .99

. observed is more than twice expected

Observed Versus Expected Cancer Cases in Health District #3 1981-1985

	Males Only		Females Only		Both Sexes	
	observed	expected	observed	expected	observed	expected
All Sites	1378.0	1443.6	1299.0	1355.2	2677.0	2776.8
Buccal cavity and pharynx	46.0	66.4 +	24.0	27.1	70.0	92.0 +
Lip	9.0	14.8	0.0	1.5	9.0	15.8
Tongue	7.0	11.4	5.0	5.3	12.0	16.4
Major salivary gland	3.0	4.1	2.0	3.6	5.0	7.6
Floor of Mouth	6.0	7.4	5.0	3.0	11.0	10.2
Gum and other mouth	3.0	9.1 +	7.0	6.2	10.0	15.4
Nasopharynx	5.0	3.4	0.0	1.5	5.0	4.8
Tonsil	3.0	6.0	4.0	2.9	7.0	8.8
Oropharynx	1.0	1.8	0.0	0.6	1.0	2.4
Hypopharynx	9.0	6.5	1.0	1.7	10.0	8.1
Pharynx, other buccal cavity	0.0	1.8	0.0	0.7	0.0	2.5
Digestive system	298.0	365.5 *	248.0	312.6 *	546.0	672.8 *
Esophagus	19.0	22.4	7.0	8.5	26.0	30.2
Stomach	35.0	53.2 +	13.0	31.3 *	48.0	79.3 *
Small Intestine	5.0	3.6	7.0	3.4 +	12.0	6.9
Colon excluding rectum	93.0	139.4 *	137.0	149.2	230.0	287.5 *
Rectum and rectosigmoid	83.0	72.6	34.0	54.8 *	117.0	126.1
Anus, anal canal, anorectum	3.0	2.0	4.0	3.3	7.0	5.2
Liver	5.0	12.1 +	3.0	6.2	8.0	17.9 +
Gallbladder	2.0	3.0	3.0	8.8	5.0	12.7 +
Other biliary	4.0	6.2	2.0	5.4	6.0	11.6
Pancreas	48.0	46.4	35.0	37.9	83.0	83.5
Retroperitoneum	1.0	1.8	2.0	1.6	3.0	3.6
Peritoneum	0.0	0.5	1.0	0.7	1.0	1.1
Other digestive organs	0.0	1.3	0.0	1.4	0.0	2.6
Respiratory system	284.0	338.0 *	143.0	105.5 *	427.0	433.1
Nasal cavity, sinuses and ear	2.0	3.1	2.0	2.1	4.0	5.1
Larynx	27.0	32.1	8.0	5.6	35.0	37.1
Lung and bronchus	250.0	298.1 *	131.0	96.3 *	381.0	385.2
Trachea, pleura, and other	5.0	4.3	2.0	1.4	7.0	5.7
Bones and joints	3.0	3.7	5.0	2.7	8.0	6.3
Soft tissue (including heart)	11.0	9.3	6.0	7.1	17.0	16.3
Skin (exc. basal and sq. carcinoma)	23.0	27.6	20.0	27.6	43.0	55.0
Melanomas of the skin	20.0	24.9	19.0	25.4	39.0	50.1
Other skin cancers	3.0	2.7	1.0	2.2	4.0	4.9
Breast	3.0	3.1	383.0	368.0	386.0	380.2
Female genital system			213.0	253.9 +	213.0	259.8 *
Cervix uteri			44.0	54.1	44.0	55.1
Corpus uteri			71.0	123.6 *	71.0	126.4 *
Uterus, NOS			12.0	3.3 *	12.0	3.4 *
Ovary			69.0	59.1	69.0	60.7
Vagina			5.0	3.1	5.0	3.2
Vulva			8.0	7.4	8.0	7.8
Other female genital organs			4.0	3.2	4.0	3.2

Observed Versus Expected Cancer Cases in Health District #3 1981-1985 (continued)

	Males Only		Females Only		Both Sexes	
	observed	expected	observed	expected	observed	expected
Male genital system	358.0	279.0 *			358.0	265.9 *
Prostate gland	336.0	260.2 *			336.0	247.3 *
Testis	18.0	14.5			18.0	14.5
Penis	2.0	3.4			2.0	3.2
Other male genital organs	2.0	0.8 .			2.0	0.7 .
Urinary system	145.0	137.5	70.0	55.4	215.0	188.9
Urinary bladder	101.0	97.8	35.0	33.3	136.0	128.0
Kidney and renal pelvis	43.0	35.1	33.0	19.6 *	76.0	54.0 +
Ureter	1.0	3.0	2.0	1.6	3.0	4.5
Other urinary organs	0.0	1.5	0.0	0.9	0.0	2.3
Eye	5.0	3.3	2.0	3.0	7.0	6.4
Brain and other nervous system	33.0	24.5	33.0	18.1 *	66.0	42.5 *
Brain	30.0	23.2	31.0	17.1 *	61.0	40.1 *
Other nervous system	3.0	1.3	2.0	1.0	5.0	2.2 .
Endocrine system	4.0	12.0 +	16.0	25.5	20.0	37.5 *
Thyroid gland	4.0	9.9	15.0	24.2	19.0	34.3 *
Other endocrine	0.0	2.0	1.0	1.3	1.0	3.2
Lymphomas	68.0	54.5	53.0	46.3	121.0	100.4 +
Hodgkin's disease	18.0	14.4	12.0	10.5	30.0	24.7
Non-Hodgkin's disease	50.0	40.1	41.0	35.7	91.0	75.5
Multiple myeloma	21.0	17.7	13.0	15.3	34.0	32.6
Leukemias	45.0	48.6	24.0	35.2	69.0	83.1
Lymphocytic	18.0	20.8	5.0	13.8 +	23.0	34.2
Granulocytic	18.0	20.4	13.0	16.6	31.0	36.7
Monocytic	1.0	1.5	0.0	1.1	1.0	2.5
Other	8.0	6.0	6.0	3.8	14.0	9.5
Other, ill-defined & unknown sites	31.0	52.8 *	46.0	51.7	77.0	103.8 *
*Cervix insitu *(not in all sites)			91.0	172.6 *	91.0	173.7 *

+ exceeds probability at .95

\* exceeds probability at .99

. observed is more than twice expected

## Observed Versus Expected Cancer Cases in Health District #4 1981-1985

	Males Only		Females Only		Both Sexes	
	observed	expected	observed	expected	observed	expected
All Sites	1470	1679.7 *	1336	1590.3 *	2807	3259.8 *
Buccal cavity and pharynx	55	77.0 +	20	31.7 +	75	107.4 *
Lip	17	17.1	0	1.8	17	18.5
Tongue	7	13.2	3	6.2	10	19.2 +
Major salivary gland	7	4.8	1	4.2	8	8.8
Floor of Mouth	4	8.6	5	3.4	9	11.9
Gum and other mouth	10	10.5	6	7.3	16	18.0
Nasopharynx	3	3.9	0	1.7	3	5.5
Tonsil	2	6.9	2	3.4	4	10.2
Oropharynx	3	2.1	0	0.7	3	2.8
Hypopharynx	2	7.6 +	3	2.0	5	9.4
Pharynx, other buccal cavity	0	2.1	0	0.8	0	2.9
Digestive system	311	424.7 *	313	374.6 *	624	795.3 *
Esophagus	10	26.0 *	4	10.0	14	35.4 *
Stomach	31	61.7 *	16	37.6 *	47	94.1 *
Small Intestine	3	4.2	3	4.0	6	8.1
Colon excluding rectum	129	162.0 *	186	179.0	315	340.5
Rectum and rectosigmoid	72	84.5	51	65.4	123	148.9 +
Anus, anal canal, anorectum	0	2.3	3	3.9	3	6.1
Liver	13	14.0	2	7.3 +	15	21.1
Gallbladder	3	4.4	5	10.7	8	15.2
Other biliary	4	7.2	3	6.5	7	13.7
Pancreas	41	53.9	37	45.5	78	98.8 +
Retroperitoneum	4	2.1	3	1.9	7	4.2
Peritoneum	1	0.5	0	0.8	1	1.3
Other digestive organs	0	1.5	0	1.7	0	3.1
Respiratory system	330	393.6 *	129	123.4	460	508.2 +
Nasal cavity, sinuses and ear	4	3.5	0	2.5	4	6.0
Larynx	33	37.2	9	6.5	42	43.2
Lung and bronchus	289	347.3 *	118	112.7	408	452.4 +
Trachea, pleura, and other	4	5.0	2	1.6	6	6.7
Bones and joints	9	4.5 +	2	3.2	11	7.5
Soft tissue (including heart)	2	10.8 *	10	8.3	12	19.0
Skin (exc. basal and sq. carcinoma)	20	32.1 +	22	31.7	42	63.7 *
Melanomas of the skin	14	28.9 *	18	29.2 +	32	58.0 *
Other skin cancers	6	3.1	4	2.6	10	5.8
Breast	3	3.6	377	427.1 +	380	440.2 *
Female genital system			206	294.5 *	206	301.5 *
Cervix uteri			46	61.9 +	46	63.5 +
Corpus uteri			84	143.7 *	84	146.8 *
Uterus, NOS			7	3.9	7	3.9
Ovary			56	68.8	56	70.6
Vagina			0	3.7	0	3.8
Vulva			9	8.9	9	9.2
Other female genital organs			4	3.7	4	3.7



Observed Versus Expected Cancer Cases in Health District #4 1981-1985 (continued)

	Males Only		Females Only		Both Sexes	
	observed	expected	observed	expected	observed	expected
Male genital system	381	325.7 *			381	317.6 *
Prostate gland	352	303.2 *			352	295.7 *
Testis	24	17.6			24	17.0
Penis	5	3.9			5	3.7
Other male genital organs	0	0.9			0	0.8
Urinary system	157	159.7	64	66.0	221	222.7
Urinary bladder	110	113.6	40	40.0	150	151.4
Kidney and renal pelvis	46	40.7	23	23.0	69	63.0
Ureter	0	3.5	1	1.9	1	5.3
Other urinary organs	1	1.8	0	1.1	1	2.8
Eye	3	3.8	1	3.5	4	7.4
Brain and other nervous system	29	28.5	14	20.9	43	49.2
Brain	29	26.9	13	19.7	42	46.4
Other nervous system	0	1.5	1	1.2	1	2.5
Endocrine system	9	14.0	24	29.1	33	43.5
Thyroid gland	6	11.6	24	27.7	30	39.8
Other endocrine	3	2.3	0	1.5	3	3.7
Lymphomas	48	64.1 +	54	54.7	102	118.2
Hodgkin's disease	13	17.5	14	12.3	27	29.3
Non-Hodgkin's disease	35	46.6	40	42.3	75	88.6
Multiple myeloma	15	20.5	17	18.3	32	38.6
Leukemias	35	56.1 *	33	41.5	68	97.2 *
Lymphocytic	17	23.8	15	16.3	32	39.8
Granulocytic	9	23.8 *	15	19.6	24	43.2
Monocytic	2	1.7	1	1.3	3	3.0
Other	7	6.8	2	4.5	9	11.1
Other, ill-defined & unknown sites	63	61.1	50	61.8	113	122.4
#Cervix insitu #(not in all sites)			99	195.1 *	99	202.5 *

+ exceeds probability at .95

\* exceeds probability at .99

. observed is more than twice expected

Observed Versus Expected Cancer Cases in Health District #5 1981-1985

	Males Only		Females Only		Both Sexes	
	observed	expected	observed	expected	observed	expected
All Sites	1354	1704.6 *	1257	1556.2 *	2611	3227.6 *
Buccal cavity and pharynx	27	78.4 +	18	31.0 +	45	106.8 *
Lip	2	17.5 *	0	1.7	2	18.4 *
Tongue	3	13.4 *	6	6.1	9	19.0 +
Major salivary gland	6	4.9	1	4.2	7	9.0
Floor of Mouth	2	8.7 +	1	3.4	3	11.9 +
Gum and other mouth	2	10.7 +	2	7.1	4	17.8 *
Nasopharynx	3	4.1	1	1.7	4	5.7
Tonsil	3	7.0	4	3.3	7	10.1
Oropharynx	1	2.1	0	0.7	1	2.7
Hypopharynx	4	7.7	2	1.9	6	9.3
Pharynx, other buccal cavity	1	2.2	1	0.8	2	2.9
Digestive system	319	429.5 *	263	353.1 *	582	773.8 *
Esophagus	11	26.2 *	3	9.6 +	14	34.7 *
Stomach	36	62.5 *	22	35.3 +	58	91.3 *
Small Intestine	5	4.2	5	3.9	10	8.0
Colon excluding rectum	144	163.9	138	168.5 +	282	330.6 *
Rectum and rectosigmoid	71	85.3	41	61.9 *	112	145.1 *
Anus, anal canal, anorectum	4	2.3	0	3.7	4	6.0
Liver	7	14.2	6	7.0	13	20.8
Gallbladder	1	4.4	7	9.9	8	14.6
Other biliary	3	7.3	2	6.1	5	13.3 +
Pancreas	34	54.4	36	42.7	70	96.0 *
Retroperitoneum	1	2.2	2	1.9	3	4.2
Peritoneum	2	0.6	0	0.8	2	1.3
Other digestive organs	0	1.5	1	1.5	1	3.0
Respiratory system	296	397.3 *	143	120.4 +	439	500.5 *
Nasal cavity, sinuses and ear	1	3.6	1	2.4	2	6.0
Larynx	28	37.7	3	6.4	31	43.0
Lung and bronchus	264	350.3 *	136	109.8 +	400	444.9 +
Trachea, pleura, and other	3	5.1	3	1.6	6	6.7
Bones and joints	6	4.7	3	3.3	9	7.8
Soft tissue (including heart)	6	11.2	10	8.4	16	19.5
Skin (exc. basal and sq. carcinoma)	19	33.9 +	16	33.1 *	35	66.7 *
Melanomas of the skin	14	30.6 *	14	30.6 *	28	60.8 *
Other skin cancers	5	3.2	2	2.7	7	5.9
Breast	3	3.7	340	423.7 *	343	445.0 *
Female genital system			222	293.4 *	222	304.4 *
Cervix uteri			34	64.6 *	34	66.8 *
Corpus uteri			115	140.8 +	115	146.0 +
Uterus, NOS			4	3.8	4	3.9
Ovary			63	68.3	63	71.2
Vagina			2	3.5	2	3.8
Vulva			1	8.5 +	1	9.1 *
Other female genital organs			3	3.7	3	3.8

Observed Versus Expected Cancer Cases in Health District #5 1981-1985 (continued)

	Males Only		Females Only		Both Sexes	
	observed	expected	observed	expected	observed	expected
Male genital system	329	328.6			329	306.2
Prostate gland	312	304.6			312	282.8
Testis	12	18.9			12	18.6
Penis	3	4.0			3	3.7
Other male genital organs	2	0.9			2	0.8
Urinary system	157	161.9	47	62.9 +	204	218.0
Urinary bladder	126	115.0	30	37.6	156	147.3
Kidney and renal pelvis	27	41.5	15	22.4	42	62.7 *
Ureter	4	3.5	2	1.8	6	5.1
Other urinary organs	0	1.8	0	1.0	0	2.7
Eye	1	4.0	3	3.4	4	7.6
Brain and other nervous system	19	29.8 +	17	21.4	36	50.9 +
Brain	19	28.1	16	20.2	35	47.9
Other nervous system	0	1.6	1	1.3	1	2.7
Endocrine system	11	14.9	22	31.2	33	46.4 +
Thyroid gland	7	12.4	20	29.7	27	42.5 +
Other endocrine	4	2.5	2	1.6	6	3.9
Lymphomas	55	66.1	55	54.2	110	119.5
Hodgkin's disease	12	18.2	10	13.0	22	30.8
Non-Hodgkin's disease	43	47.8	45	41.0	88	88.4
Multiple myeloma	15	20.7	11	17.3	26	37.5
Leukemias	34	57.9 *	32	40.6	66	97.2 *
Lymphocytic	8	24.6 *	9	15.8	17	39.8 *
Granulocytic	10	24.5	17	19.2	27	43.2 +
Monocytic	2	1.8	0	1.2	2	3.0
Other	14	7.1 *	6	4.3	20	11.1 *
Other, ill-defined & unknown sites	57	62.1	55	58.4	112	119.5
#Cervix insitu # (not in all sites)			181	222.0 *	181	225.7 *

+ exceeds probability at .95

\* exceeds probability at .99

. observed is more than twice expected

# Age-adjusted Incidence -- Cancer in Montana 1979-1985

Annual age adjusted incidence rate per 100,000, by primary site, for MONTANA, for all sexes.

	1979	1980	1981	1982	1983	1984	1985	Montana Avg.	U.S.*
All sites	145.8	211.2	257.3	311.6	276.4	294.5	295.5	256.0	337.9
Buccal cavity and pharynx									
Lip	5.1	3.3	5.9	8.0	5.4	6.9	8.3	6.1	11.6
Tongue	0.4	0.2	0.8	1.1	1.0	0.9	1.0	0.8	
Major salivary gland	0.9	0.6	1.5	1.5	1.2	1.3	1.9	1.3	
Floor of mouth	0.4	0.9	0.1	0.6	0.6	0.7	1.2	0.6	
Gum and other mouth	0.9	0.2	0.8	1.8	0.8	0.4	0.6	0.8	
Nasopharynx	0.7	0.6	0.9	1.3	0.6	1.2	1.1	0.9	
Tonsil	0.3	0.0	0.5	0.5	0.2	0.2	0.5	0.3	
Oropharynx	0.6	0.2	0.5	0.6	0.7	1.1	0.6	0.6	
Hypopharynx	0.1	0.2	0.1	0.3	0.0	0.1	0.2	0.2	
Pharynx, other buccal cavity	0.5	0.3	0.5	0.6	0.4	0.8	1.1	0.6	
Pharynx, other	0.3	0.0	0.2	0.0	0.0	0.1	0.1	0.1	
Digestive system	25.9	45.8	52.8	65.2	58.7	64.1	60.5	53.3	
Esophagus	1.3	2.5	2.2	1.9	2.3	2.1	1.7	2.0	
Stomach	2.7	2.7	4.9	6.9	4.7	6.2	6.0	4.9	9.0
Small intestine	0.4	1.5	0.9	1.8	0.7	0.9	0.9	1.0	
Colon excluding rectum	11.7	20.2	22.8	27.9	27.7	29.6	29.2	24.1	34.8
Rectum and sigmoid	5.1	9.1	11.1	13.4	11.5	11.8	13.1	10.7	14.9
Anus, anal canal, anorectum	0.4	0.3	0.5	0.5	0.4	0.2	0.2	0.4	
Liver	0.5	0.4	0.6	2.2	1.5	1.5	0.7	1.0	
Gallbladder	0.1	0.8	0.5	0.9	1.2	1.2	0.4	0.7	
Other biliary	0.0	1.0	0.8	0.9	0.8	1.0	0.4	0.7	
Pancreas	3.2	6.9	8.1	8.3	7.3	9.1	7.3	7.2	9.2
Retropertitoneum	0.1	0.1	0.5	0.4	0.5	0.1	0.2	0.3	
Peritoneum	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.4	
Other digestive organs	0.2	0.4	0.0	0.1	0.0	0.0	0.0	0.1	
Respiratory system	25.1	40.6	45.2	48.3	49.5	49.3	48.0	43.7	
Nasal cavity, sinuses and ear	0.3	0.7	0.2	0.8	0.2	0.3	0.2	0.4	
Larynx	2.3	4.1	3.2	4.8	4.1	3.4	4.1	3.7	4.7
Lung and bronchus	22.0	35.2	41.3	42.2	44.2	44.8	42.8	38.9	51.5
Trachea, pleura, and other	0.5	0.7	0.5	0.4	1.0	0.8	0.8	0.7	
Bones and joints	0.7	0.3	1.0	1.3	0.5	1.2	0.9	0.8	
Soft tissue ( including heart )	1.3	0.7	0.6	1.8	2.0	1.3	2.4	1.4	
Skin (exc. basal and sq. carcinoma)	3.6	5.1	3.9	6.9	4.6	3.8	4.3	4.6	
Melanomas of the skin	3.2	4.0	3.0	5.3	4.1	3.3	3.5	3.8	8.0
Other skin cancers	0.4	1.1	0.8	1.7	0.5	0.5	0.8	0.8	
Breast	22.5	25.9	34.8	39.8	38.9	43.3	44.2	35.7	46.4

\*Using 1978-81 SEER data published in 1985.  
NIH Publication #85-1837

# Age-adjusted Incidence -- Cancer in Montana 1979-1985

Annual age adjusted incidence rate per 100,000, by primary site, for MONTANA , for all sexes.

	1979	1980	1981	1982	1983	1984	1985	Montana Avg.	U.S.*
<b>Female genital system</b>									
Cervix uteri	11.4	16.1	21.9	27.9	19.7	22.6	22.5	20.3	
Corpus uteri	1.7	3.4	4.6	4.2	3.6	4.0	4.7	3.8	5.3
Uterus, NOS	5.5	6.4	9.0	12.4	9.3	9.3	9.5	8.8	13.2
Ovary	0.8	0.7	1.2	1.2	0.8	1.1	0.6	0.9	
Vagina	2.2	5.0	5.8	8.2	5.5	7.3	6.9	5.8	7.1
Vulva	0.1	0.2	0.1	0.3	0.3	0.2	0.1	0.2	
	0.9	0.4	0.7	1.3	0.2	0.3	0.3	0.6	
Other female genital organs	0.1	0.1	0.5	0.3	0.1	0.3	0.4	0.3	
<b>Male genital system</b>									
Prostate gland	17.7	29.1	35.6	40.2	36.8	35.5	35.3	32.9	
Testis	15.9	27.2	33.0	38.2	34.3	34.2	33.3	30.9	31.3
Penis	1.5	1.8	2.1	1.5	1.9	1.1	1.6	1.6	
Other male genital organs	0.3	0.0	0.3	0.5	0.5	0.2	0.3	0.3	
	0.0	0.1	0.2	0.0	0.1	0.0	0.1	0.1	
<b>Urinary system</b>									
Urinary bladder	11.2	16.6	18.1	28.5	18.6	23.6	25.4	20.3	
Kidney and renal pelvis	7.8	12.2	12.6	19.4	12.7	15.2	16.8	13.8	14.8
Ureter	3.0	3.3	5.3	8.1	5.9	8.0	8.2	6.0	6.7
Other urinary organs	0.4	1.0	0.2	1.1	0.0	0.3	0.2	0.4	
	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.1	
<b>Eye</b>									
	0.7	0.1	0.8	0.9	0.1	0.3	0.2	0.4	
<b>Brain and other nervous system</b>									
Brain	4.0	3.9	4.4	5.5	5.6	5.8	5.6	5.0	5.6
Other nervous system	3.4	3.6	4.2	5.2	5.4	5.2	5.4	4.6	
	0.5	0.3	0.2	0.3	0.2	0.7	0.3	0.3	
<b>Endocrine system</b>									
Thyroid gland	2.1	2.8	3.8	3.7	2.7	2.6	2.7	2.9	
Other endocrine	2.0	2.3	3.4	2.9	2.5	2.3	2.5	2.5	
	0.2	0.5	0.4	0.8	0.2	0.3	0.2	0.4	
<b>Lymphomas</b>									
Hodgkin's disease	5.6	7.3	9.0	11.1	13.6	11.3	12.4	10.0	
Non-Hodgkin's lymphomas	1.4	2.2	2.2	2.2	3.1	2.8	3.3	2.4	2.7
	4.1	5.2	6.8	8.9	10.5	8.5	9.2	7.6	10.3
<b>Multiple myeloma</b>									
	1.6	1.6	2.9	2.0	3.0	3.3	4.0	2.6	
<b>Leukemias</b>									
Lymphocytic	3.4	4.8	7.0	9.1	6.5	7.3	6.8	6.4	9.6
Granulocytic	1.5	1.6	3.3	2.0	2.3	2.2	2.5	2.2	
Monocytic	1.0	2.3	1.8	5.0	2.6	3.1	3.0	2.7	
Other	0.3	0.0	0.6	0.4	0.4	0.1	0.0	0.2	
	0.6	0.9	1.7	1.5	1.1	1.8	1.2	1.3	
<b>Other, ill-defined &amp; unknown sites</b>									
	4.0	7.0	9.4	11.3	10.2	12.5	11.9	9.5	
<b>#Cervix insitu # (not in all sites)</b>									
	5.9	7.1	10.2	10.1	9.8	9.1	12.7	9.3	
<b>Unknown age or sex</b>									
	9								

\*Using 1978-81 SEER data published in 1985.  
NIH Publication #85-1837

# Age-adjusted Incidence -- Cancer in Montana 1979-1985

Annual age adjusted incidence rate per 100,000, by primary site, for MONTANA, for males.

	1979	1980	1981	1982	1983	1984	1985	Montana Avg.	U.S.*
All sites	171.3	246.8	298.1	357.3	317.4	342.6	326.7	294.3	397.2
Buccal cavity and pharynx	7.5	4.9	8.7	10.9	7.8	9.7	13.3	9.0	17.7
Lip	0.3	0.5	1.7	2.2	2.2	2.0	2.3	1.6	
Tongue	1.4	0.8	1.7	1.9	1.6	1.9	2.4	1.7	
Major salivary gland	0.5	1.2	0.0	1.2	0.8	1.0	2.2	1.0	
Floor of mouth	1.9	0.3	1.0	1.8	1.1	0.3	1.1	1.1	
Gum and other mouth	0.5	0.8	1.3	1.4	0.6	1.8	1.3	1.1	
Nasopharynx	0.7	0.0	0.8	0.3	0.5	0.3	1.0	0.5	
Tonsil	0.8	0.2	0.8	0.5	0.6	1.0	0.3	0.6	
Oropharynx	0.3	0.5	0.2	0.6	0.0	0.2	0.5	0.3	
Hypopharynx	0.8	0.6	1.1	1.0	0.5	0.9	1.9	1.0	
Pharynx, other buccal cavity	0.3	0.0	0.2	0.0	0.0	0.2	0.2	0.1	
Digestive system	32.1	48.9	61.6	76.5	69.7	80.4	73.1	63.2	
Esophagus	2.6	4.8	2.7	3.3	4.2	3.8	2.4	3.4	13.3
Stomach	4.1	1.1	6.9	9.5	7.8	8.8	8.7	6.7	
Small intestine	0.5	1.9	0.9	2.6	0.3	1.1	1.1	1.2	
Colon excluding rectum	13.1	20.6	22.5	27.6	30.7	31.8	29.8	25.2	39.0
Rectum and sigmoid	6.3	10.8	16.5	16.7	15.5	18.7	17.9	14.6	19.2
Anus, anal canal, anorectum	0.6	0.3	0.8	0.3	0.6	0.3	0.0	0.4	
Liver	0.2	0.3	0.2	3.0	2.8	2.4	1.4	1.5	
Gallbladder	0.3	0.3	0.3	0.3	0.9	0.8	0.3	0.5	
Other biliary	0.0	0.8	1.1	1.0	0.5	1.5	0.9	0.8	
Pancreas	4.1	7.6	9.1	10.7	6.3	10.9	9.1	8.3	11.2
Retropertoneum	0.0	0.0	0.5	0.9	0.0	0.3	0.5	0.3	
Peritoneum	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.2	
Other digestive organs	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.1	
Respiratory system	41.4	61.9	68.7	72.4	72.5	72.6	66.5	65.1	
Nasal cavity, sinuses and ear	0.0	0.3	0.4	0.5	0.0	0.5	0.5	0.3	
Larynx	4.7	6.7	5.9	8.5	8.0	5.5	6.6	6.6	8.6
Lung and bronchus	36.0	54.1	61.8	62.8	63.3	65.5	58.3	57.4	82.5
Trachea, pleura, and other	0.7	0.8	0.6	0.6	1.2	1.0	1.1	0.9	
Bones and joints	0.9	0.5	1.1	1.7	0.3	2.2	1.3	1.1	
Soft tissue ( including heart )	2.5	0.7	1.2	1.2	1.7	1.3	1.9	1.5	
Skin (exc. basal and sq. carcinoma)	3.5	4.9	4.4	8.7	3.6	3.8	3.5	4.6	
Melanomas of the skin	2.9	3.1	3.7	5.7	2.8	3.0	3.3	3.5	8.8
Other skin cancers	0.5	1.8	0.8	3.1	0.8	0.8	0.2	1.2	
Breast	0.0	0.5	0.3	1.0	0.5	0.5	1.1	0.6	0.8

\*Using 1978-81 SEER data published in 1985.  
NIH Publication #85-1837

Age-adjusted Incidence -- Cancer in Montana 1979-1985

Annual age adjusted incidence rate per 100,000, by primary site, for MONTANA, for males.

	1979	1980	1981	1982	1983	1984	1985	Montana Avg.	U.S.*
Male genital system	39.4	65.5	80.4	91.9	84.1	80.9	79.8	74.6	77.4
Prostate gland	35.8	61.7	74.9	87.8	79.0	78.3	75.7	70.5	
Testis	3.0	3.6	4.3	3.1	3.8	2.1	3.2	3.3	
Penis	0.6	0.0	0.6	1.1	1.1	0.5	0.6	0.6	
Other male genital organs	0.0	0.3	0.6	0.0	0.3	0.0	0.3	0.2	
Urinary system	19.0	24.9	30.7	44.7	27.7	41.2	40.3	32.7	25.8
Urinary bladder	13.7	20.2	21.7	33.3	20.2	28.4	29.5	23.9	9.8
Kidney and renal pelvis	4.6	3.4	8.4	10.4	7.5	12.3	10.3	8.1	
Ureter	0.8	1.2	0.5	1.1	0.0	0.3	0.3	0.6	
Other urinary organs	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.1	
Eye	0.3	0.3	0.8	1.0	0.3	0.7	0.3	0.5	
Brain and other nervous system	6.0	5.0	5.0	6.7	6.7	6.6	6.3	6.0	6.7
Brain	5.5	4.4	4.6	6.7	6.3	6.1	6.3	5.7	
Other nervous system	0.5	0.6	0.3	0.0	0.3	0.5	0.0	0.3	
Endocrine system	0.8	2.2	2.5	3.1	1.4	1.3	1.2	1.8	
Thyroid gland	0.8	1.4	1.7	2.3	0.9	1.0	1.2	1.3	
Other endocrine	0.0	0.8	0.8	0.8	0.5	0.3	0.0	0.4	
Lymphomas	6.2	9.1	9.2	11.9	17.0	11.8	14.0	11.3	3.2
Hodgkin's disease	1.6	3.4	1.8	1.6	4.1	3.7	4.1	2.9	12.0
Non-Hodgkin's lymphomas	4.6	5.6	7.4	10.3	12.9	8.1	9.8	8.4	
Multiple myeloma	1.9	2.4	4.2	2.2	4.1	5.2	4.3	3.5	
Leukemias	4.7	6.2	7.8	11.3	8.0	10.3	8.8	8.1	12.7
Lymphocytic	2.6	2.6	4.7	2.7	2.7	2.7	4.5	3.2	
Granulocytic	1.0	2.3	1.3	5.2	2.1	4.5	2.4	2.7	
Monocytic	0.0	0.0	0.3	0.8	0.8	0.3	0.0	0.3	
Other	1.1	1.3	1.5	2.5	2.4	2.8	1.9	1.9	
Other, ill-defined & unknown sites	5.0	8.8	11.5	12.0	11.9	14.3	11.3	10.7	

Unknown age or sex 16

\*Using 1978-81 SEER data published in 1985.  
NIH Publication #85-1837



# Age-adjusted Incidence -- Cancer in Montana 1979-1985

Annual age adjusted incidence rate per 100,000, by primary site, for MONTANA, for females.

	1979	1980	1981	1982	1983	1984	1985	Montana Avg.	U.S.*
All sites	127.5	185.4	227.0	280.5	250.5	261.9	277.0	230.0	302.5
Buccal cavity and pharynx									
Lip	3.1	1.8	3.3	5.3	3.2	4.4	4.1	3.6	6.7
Tongue	0.5	0.0	0.0	0.2	0.0	0.0	0.0	0.1	
Major salivary gland	0.6	0.5	1.3	1.1	0.8	0.7	1.5	0.9	
Floor of mouth	0.3	0.5	0.3	0.5	0.5	0.4	0.2	0.3	
Gum and other mouth	0.0	0.2	0.6	1.7	0.4	0.5	0.2	0.5	
Nasopharynx	0.8	0.4	0.5	1.1	0.6	0.6	0.9	0.7	
Tonsil	0.0	0.0	0.3	0.2	0.0	0.2	0.0	0.1	
Oropharynx	0.5	0.2	0.3	0.7	0.7	1.2	0.8	0.6	
Hypopharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pharynx, other buccal cavity	0.2	0.0	0.0	0.2	0.2	0.8	0.5	0.3	
Digestive system									
Esophagus	20.5	43.9	44.9	55.7	50.3	50.2	49.8	45.0	
Stomach	0.2	0.5	1.8	0.9	0.7	0.7	1.1	0.8	
Small intestine	1.4	4.1	3.0	4.6	2.1	3.8	3.8	3.3	5.8
Colon, excluding rectum	0.3	1.2	0.9	1.1	1.1	0.9	0.7	0.9	
Rectum and rectosigmoid	10.4	20.2	22.6	28.0	26.0	28.0	28.5	23.4	32.0
Anus, anal canal, anorectum	4.2	7.8	6.6	10.4	8.2	6.0	8.7	7.4	11.8
Liver	0.2	0.3	0.2	0.3	0.1	0.2	0.5	0.3	
Gallbladder	0.7	0.5	0.9	1.5	0.3	0.7	0.2	0.7	
Other biliary	0.0	1.3	0.7	1.0	1.4	1.5	0.4	0.9	
Pancreas	0.0	1.1	0.4	0.8	1.1	0.4	0.0	0.6	
Retropertitoneum	2.5	6.4	7.3	6.4	8.1	7.6	5.9	6.3	7.6
Peritoneum	0.2	0.2	0.4	0.0	1.0	0.2	0.0	0.3	
Other digestive organs	0.2	0.0	0.0	0.0	0.0	0.3	0.0	0.1	
Respiratory system									
Nasal cavity, sinuses and ear	11.3	23.1	24.9	28.3	30.9	30.0	33.4	26.0	
Larynx	0.5	1.0	0.0	1.0	0.3	0.2	0.0	0.4	
Lung and bronchus	0.2	1.8	0.7	1.4	2.0	1.6	2.0	1.2	1.6
Trachea, pleura, and other	10.3	19.8	23.7	25.6	28.8	27.6	30.9	23.8	28.1
Bones and joints	0.2	0.6	0.5	0.2	1.0	0.6	0.5	0.5	
Bones and joints	0.4	0.0	1.0	0.9	0.6	0.2	0.6	0.5	
Soft tissue ( including heart )	0.2	0.7	0.1	2.3	2.3	1.2	2.9	1.4	
Skin (exc. basal and sq. carcinoma)	3.7	5.3	3.6	5.4	5.5	3.9	5.1	4.6	
Melanomas of the skin	3.5	4.8	2.5	4.8	5.2	3.7	3.8	4.1	7.5
Other skin cancers	0.3	0.5	1.1	0.6	0.2	0.2	1.2	0.6	
Breast	42.6	48.6	65.8	75.1	73.4	81.6	83.0	67.2	84.4

\*Using 1978-81 SEER data published in 1985.  
NIH Publication #85-1837



# Age-adjusted Incidence -- Cancer in Montana 1979-1985

Annual age adjusted incidence rate per 100,000, by primary site, for MONTANA, for females.

	1979	1980	1981	1982	1983	1984	1985	Montana Avg.	U.S.*
Female genital system	21.9	30.9	41.7	53.0	37.4	43.2	42.8	38.7	
Cervix uteri	3.3	6.6	8.9	8.3	7.1	7.9		7.3	10.0
Corpus uteri	10.6	12.1	17.0	23.4	17.4	17.7	18.0	16.6	24.2
Uterus, NOS	1.6	1.4	2.3	2.3	1.4	1.9	1.1	1.7	
Ovary	4.3	9.5	11.0	15.6	10.4	14.1		11.1	13.1
Vagina	0.2	0.3	0.2	0.5	0.5	0.4	0.2	0.3	
Vulva	1.6	0.7	1.3	2.3	0.3	0.6	0.6	1.0	
Other female genital organs	0.3	0.2	1.0	0.5	0.2	0.6	0.8	0.5	
Urinary system	4.8	8.8	7.6	14.9	11.0	10.2	13.3	10.1	
Urinary bladder	3.0	4.9	4.9	7.7	6.5	5.4	6.8	5.6	6.8
Kidney and renal pelvis	1.8	3.0	2.7	6.1	4.5	4.6		4.1	4.3
Ureter	0.0	0.7	0.0	1.0	0.0	0.2	0.1	0.3	
Other urinary organs	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.1	
Eye	1.0	0.0	0.7	0.6	0.0	0.0	0.2	0.4	
Brain and other nervous system	2.0	2.8	3.9	4.3	4.7	5.3	5.1	4.0	
Brain	1.4	2.8	3.9	3.8	4.7	4.5	4.5	3.7	4.6
Other nervous system	0.6	0.0	0.0	0.5	0.0	0.8	0.6	0.3	
Endocrine system	3.4	3.2	5.2	4.3	4.0	3.8	4.2	4.0	
Thyroid gland	3.1	3.0	5.2	3.5	4.0	3.5	3.7	3.7	
Other endocrine	0.3	0.2	0.0	0.8	0.0	0.3	0.5	0.3	
Lymphomas	5.2	5.9	8.5	10.3	10.8	10.5	11.1	8.9	
Hodgkin's disease	1.4	0.9	2.7	2.7	2.2	1.9	2.3	2.0	2.2
Non-Hodgkin's lymphomas	3.9	5.0	5.9	7.6	8.6	8.6	8.8	6.9	8.9
Multiple myeloma	1.4	1.0	1.9	1.8	2.1	1.6	3.7	1.9	
Leukemias	2.6	3.5	6.3	7.7	5.2	4.8	5.4	5.1	7.4
Lymphocytic	0.8	0.5	2.1	1.6	2.1	1.9	1.2	1.5	
Granulocytic	1.0	2.4	2.4	5.0	3.1	2.0	3.5	2.8	
Monocytic	0.6	0.0	0.0	0.3	0.0	0.0	0.0	0.1	
Other	0.2	0.5	1.8	0.8	0.0	0.8	0.7	0.7	
Other, ill-defined & unknown sites	3.1	5.8	7.6	10.7	9.0	11.0	12.1	8.5	
#Cervix insitu # (not in all sites)	11.8	14.3	20.6	20.4	19.7	18.3	25.6	18.7	

Unknown age or sex 20

\*Using 1978-81 SEER data published in 1985.  
NIH Publication #85-1837

## SURVIVAL SUMMARY

The data included in this section represents all Montana cases reported to the Central Registry up to March, 1987.

The following graphs illustrate the relative survival rates for Montana cancer patients. Figures are also provided for comparison with national rates\* and with rates obtained from combined data of the Rocky Mountain Cancer Data System.

The relative rate is the observed rate adjusted to approximate the survival rate of the cancer cases with other causes removed.

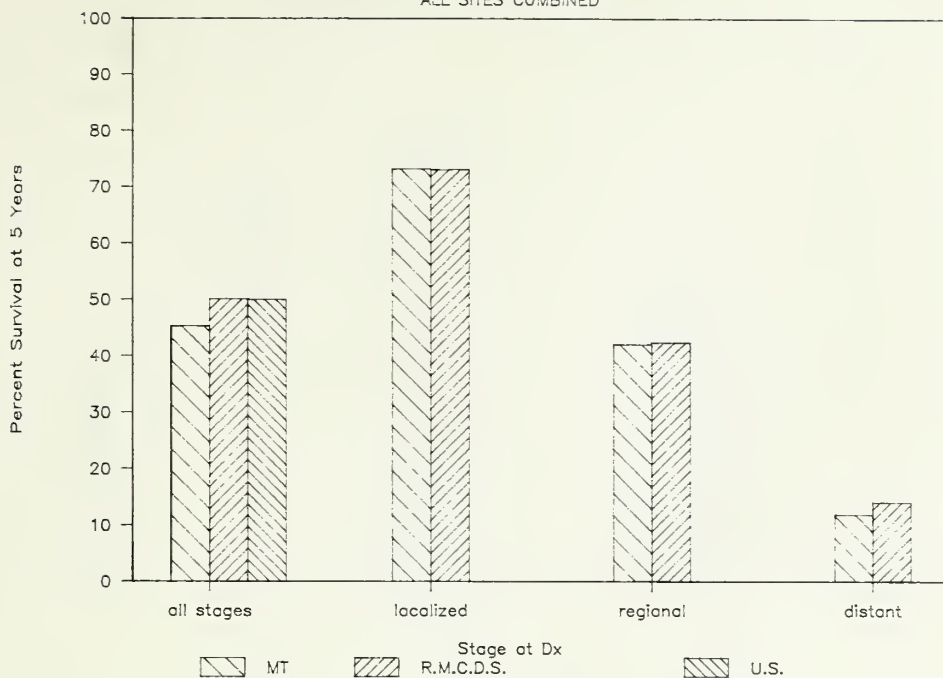
The five-year relative survival rate is obtained by adjusting observed survival for the normal life expectancy of the general population of the same age.

Thus, the relative survival rate is an estimate of the chance of surviving the effects of cancer.

\*National Cancer Institute Monograph 57, SEER, 1973-1977.

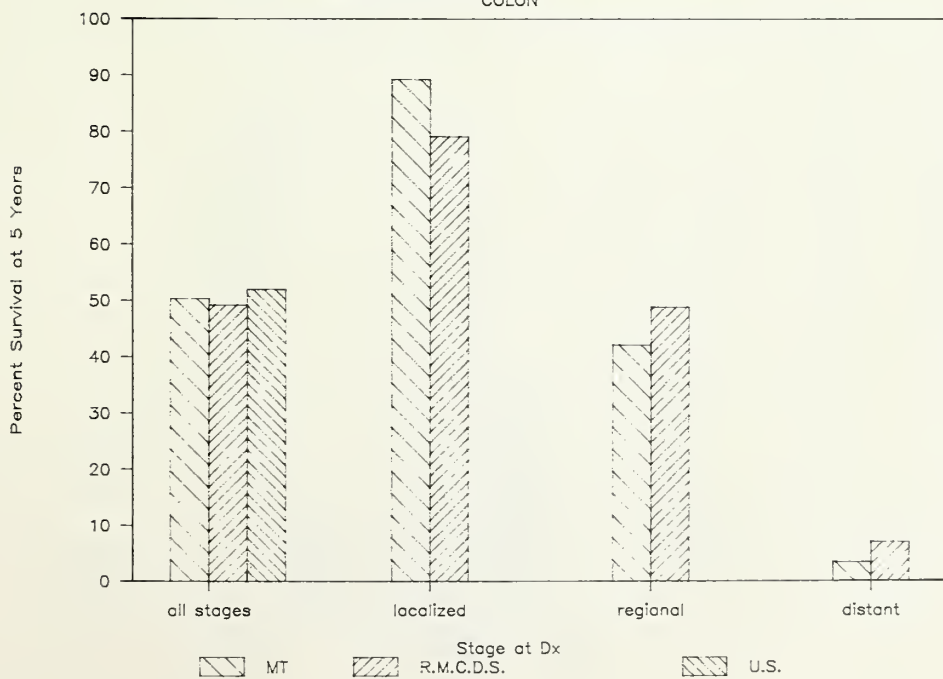
## Observed Survival 1979-1986

ALL SITES COMBINED

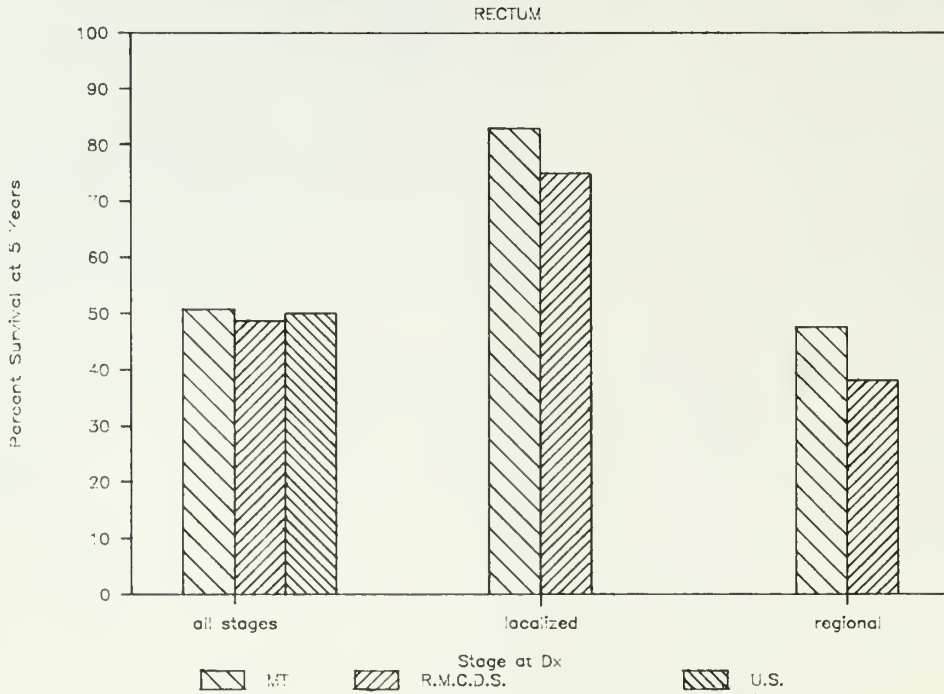


## Observed Survival 1979-1986

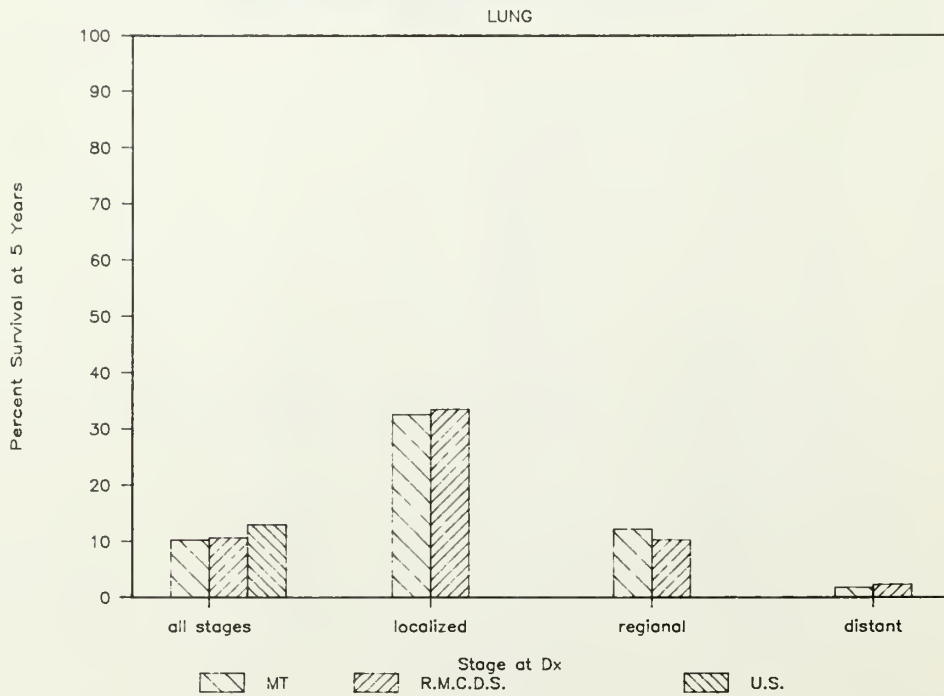
COLON



## Observed Survival 1979-1986

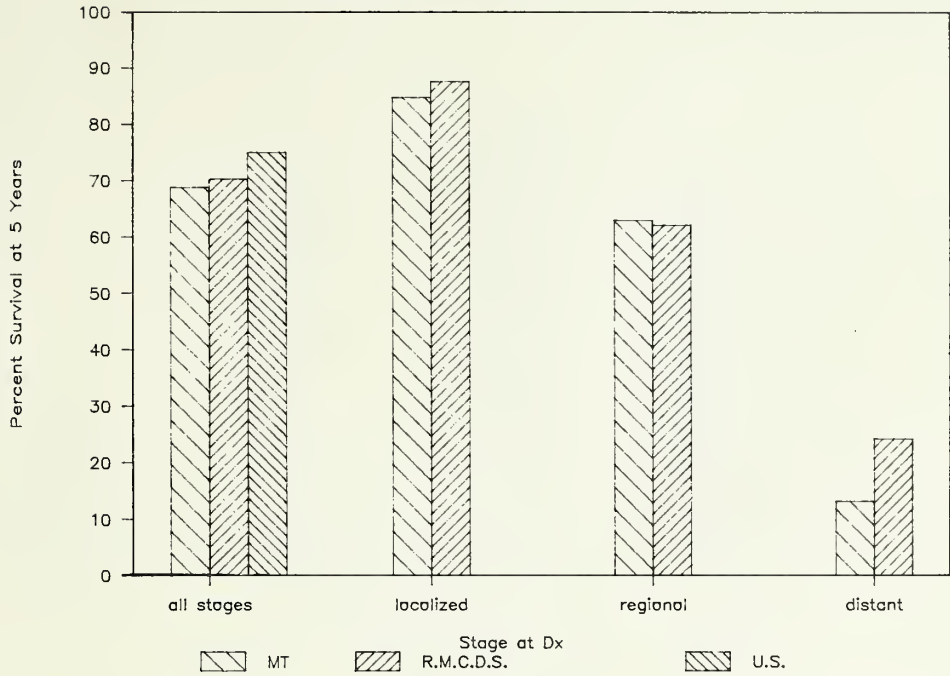


## Observed Survival 1979-1986



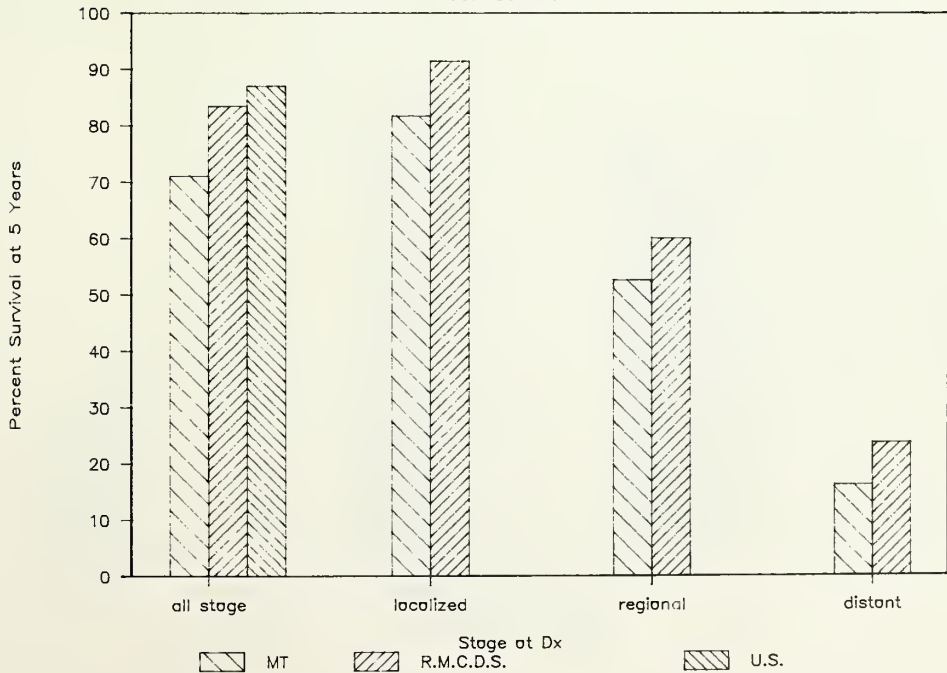
# Observed Survival 1979-1986

FEMALE BREAST

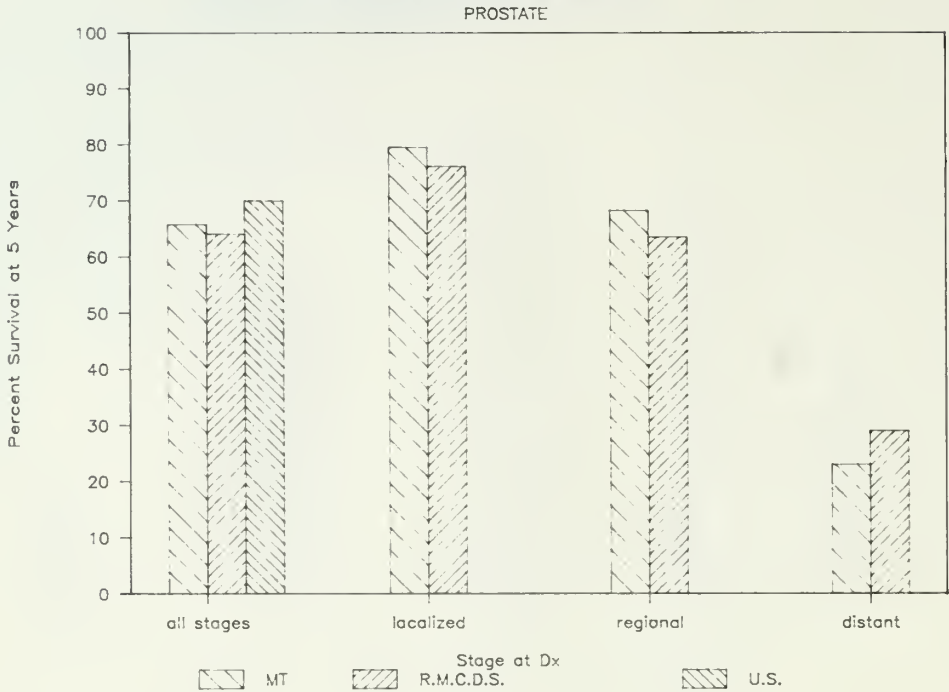


# Observed Survival 1979-1986

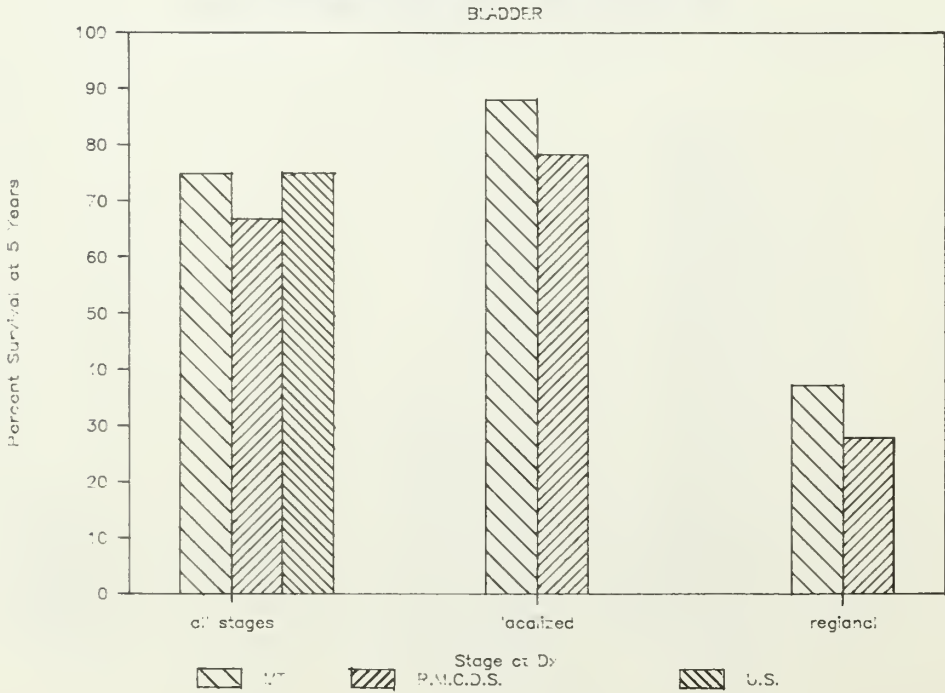
CORPUS UTERI



## Observed Survival 1979-1986



## Observed Survival 1979-1986





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